Austria	Sch22	Indonesia	Rp3100	Oman	Or 1
Bahrain	Din0.700	Iran	Rls065	Philippines	Pesos40
Belgium	BFr55	Israel	IS5.50	Portugal	Esc140
Cyprus	C£0.90	Italy	L1700	Qatar	Qr9.00
Denmark	DKr10.00	Jordan	Fils.500	S.Arabia	Rls7.00
Egypt	E£2.25	Kuwait	Fils.500	Singapore	S$4.10
Finland	Fmk7.00	Lebanon	£250.00	Spain	Pta145
France	FFr7.00	Lux	LFr50	Sweden	SKr10
Germany	DM2.20	Malaysia	Rin4.25	Switz	SFr2.40
Greece	Dr120	Morocco	Dh8.00	Thailand	Bt50
Hong Kong	HK$12	Neth	Fl3.00	Tunisia	Din0.900
Iceland	Kr125	Nigeria	Naira10	Turkey	L900
India	Rupr15	Norway	Nkr10.00	UAE	Dh7.00

EUROPE'S BUSINESS NEWSPAPER

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INDONESIA

All fired up for gas pact

Page 8

World News

Soviet ethnic clashes leave 50 dead in Uzbekistan

Soviet ethnic tension erupted in the central Asian republic of Uzbekistan, where the death toll rose above 50 and 500 were injured following bloody clashes between rival groups. Page 26

Khomeini buried
The body of Ayatollah Khomeini was eventually buried at a cemetery outside Tehran, after hysterical scenes had forced a delay to the funeral. Page 26

US speaker elected
US Democrat Tom Foley was elected Speaker of the House of Representatives, the second in line to the presidency, promising to end recent bitter divisions. Page 9

German N-complex
West Germany abandoned its $5.1bn project to build a nuclear reprocessing complex at Wackersdorf in eastern Bavaria. Page 2

Ethiopian deaths
Ethiopian President Mengistu Haile Mariam said 18 senior military officers were killed in *last* month's coup attempt. Page 6

Israeli ID scheme
The Israeli authorities issued new computerised identity cards to residents of the Gaza Strip in a marked extension of their control over the movement of Palestinians. Page 6

Punjab violence
Five people were killed in fresh guerrilla violence in India's Punjab state, where Sikhs have been battling for an independent state of Khalistan. Page 6

Hungarian debate
A possible Hungarian Army intervention to save the conservative wing of the Communist Party, as in China, has been debated by Hungarian politicians and generals. Page 2

SA blacks to hang
Twelve black men were sentenced to hang in the South African homeland of Ciskei for being part of a mob that burned five youths to death.

EC exhaust bid
An eleventh-hour initiative to force the European Community to adopt a 1991 deadline for tough new car exhaust standards looks likely to be staged by West Germany. Page 2

Sri Lanka stand-off
India and Sri Lanka headed off an immediate confrontation over Sri Lanka's demands for the withdrawal of Indian forces from the country. Page 6

Lebanese peace bid
Moroccan Foreign Minister Abdellatif Filali left for Saudi Arabia to finalise details of a plan to end Lebanon's civil war drawn up by King Hassan.

Cypriot agreement
UN Secretary-General Javier Perez de Cuellar said he sees a possible agreement emerging to the Cyprus problem after months of Greek and Turkish negotiations.

Haughey poll blow
Irish Prime Minister Charles Haughey's popularity has plummeted in the run-up to next week's snap general election, an opinion poll said.

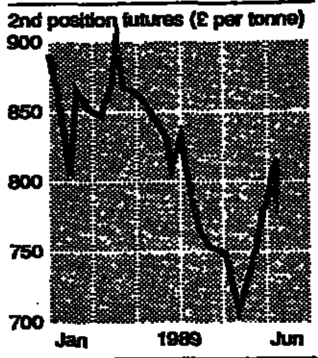
Business Summary

Madrid to take peseta into EMS mechanism

Spain announced plans to take the peseta into the exchange rate mechanism of the European Monetary System before July 1 next year, ending a long debate about the merits of full EMS integration. Page 26

COCOA: Dollar strength helped the cocoa futures market to stage a sharpish rally yesterday, although the general market tone remained dull in the absence of fresh fundamental news. The September position ended the day $35 higher at $1,300 a tonne. Page 38

Cocoa
2nd position futures (£ per tonne)



AIRBUS Industrie, the European airliner manufacturing consortium, is throwing down a new gauntlet to Boeing by going ahead with the development of a stretched version of its new A-320 medium range twin-jet aircraft. Page 26

INDIA rejected US charges of unfair trading practices but said it would continue to liberalise investment policies. Page 8

CONTAINER traffic at some UK ports has dropped to a trickle this week as companies have acted to sidestep the threatened dock strike. Page 11

TURKISH Treasury's agreement on the terms of $30m worth of commercial funding has opened the way for a $1bn project for local manufacture of armoured combat vehicles. Page 8

NWA, US owners of Northwest Airlines, gave bidders until June 16 to revise offers to buy the company in an auction likely to top $3bn. Page 28

SVENSKA Handelsbanken, Sweden's' second largest commercial bank, reported a 4 per cent increase in operating profits. Page 29

INDONESIA and Japan are negotiating a new sales agreement for liquefied natural gas likely to set the pace for Far East gas trading. Page 8

US is set to announce the sale of 60 F-16 fighters to Pakistan at a cost of $1.4bn. Page 9

SONY, Japanese electronics giant, announced plans to form a Milan-based subsidiary that will sell workstations in Italy. Page 8

BRAZIL may suspend further payments on its $112.3bn foreign debt by September, unless the International Monetary Fund resumes lending, bankers claim. Page 9

OECD, Organisation for Economic Co-operation and Development, urged the Netherlands to streamline its public sector, budget deficit and unemployment. Page 3

CREDIT Agricole, Europe's biggest banking group in terms of assets and shareholders' funds, has moved into the Swiss market. Page 32

CREDIT Suisse First Boston, US-Swiss bank, launched a $400m deal for BAT International Finance. Page 31

CNW, Chicago railroad group agreed a management buy-out offer worth some $1.6bn. It will be acquired by a group led by senior management and including Blackstone, a New York bank. Page 28

Half a million soldiers march on capital ● Unrest spreads to provincial cities

Foreigners airlifted from China as rival troops mass

By **Robert Thomson** in Peking and **Robin Pauley** in London

AN EVACUATION of foreigners from China, some using aircraft specially chartered by their governments, was under way early today as speculation mounted that Peking could be the setting for battle between rival units of the People's Liberation Army.

Western intelligence reports indicated large-scale troop movements towards Peking and a spokesman for the hardline Communist Party leadership warned the country that the battle against "counter-revolutionaries" was far from over.

A large convoy of troop trucks and tanks headed east from the centre of the city early today, and speculation about an imminent attack by the 38th army, which is thought to support more liberal leaders, circulated throughout the capital. Sporadic gunfire could be heard in various parts of Peking, but that has been the pattern since troops began their occupation on Saturday evening.

Western intelligence reports suggest that as many as 500,000 troops have moved towards the capital, but whether any or all are members of a force planning to topple the country's present hardline leadership remains unclear.

There were some reports of clashes between troops of the 27th army, which has occupied the city since Saturday, and the 38th army.

The 27th army is thought to be loyal to Zhao Ziyang, the Communist Party General Secretary, and to Qin Jiwei, the Defence Minister, neither of whom have been seen for some time.

One diplomat, however, said the troop movements towards Peking could represent part of a standard response to a perceived threat in the capital.

In the light of the rapid deterioration in the situation, however, most countries are taking no chances with their nationals. The US, Sweden, Japan, Australia and all 12 EC states joined the list of countries urging all non-diplomats to leave China as fast as possible.

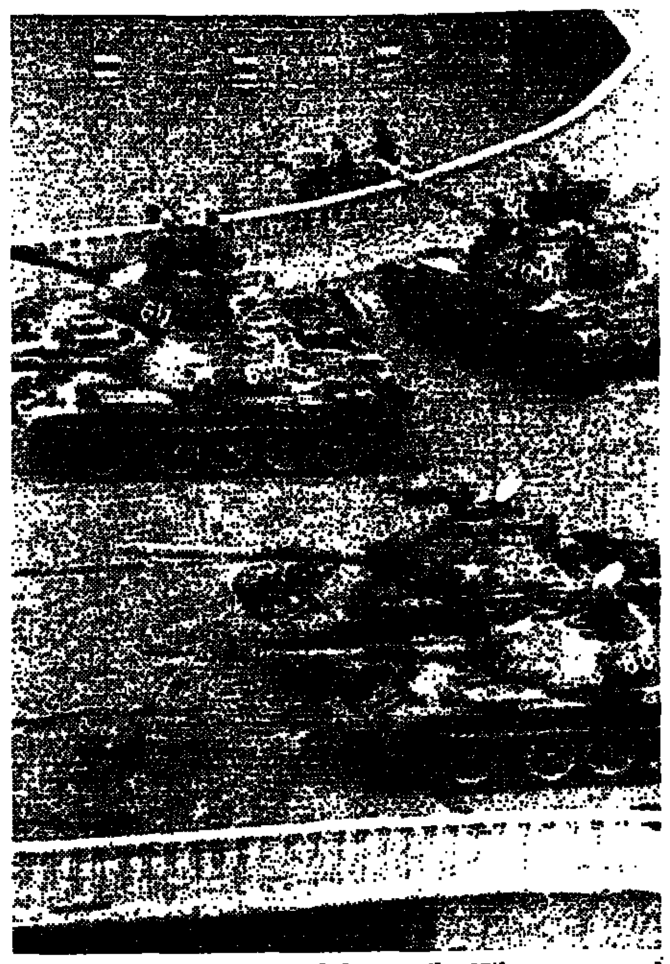
About 2,000 foreigners crowded into Peking airport as the exodus began. When it became clear that scheduled flights were becoming fully booked, the Australian Government and Sir Alan Donald, the British Ambassador, chartered Boeing 747 Jumbo jets to get their nationals out. Other charters are due today and tomorrow and the Nordic countries are considering a special airlift of their nationals.

A sign outside the US embassy in Peking reflected the deteriorating situation, warning foreigners that they would be shot if they attempted to take photographs of or use binoculars to view troops stationed in the area.

In provincial cities, meanwhile, protests continued to gather strength. Serious clashes were reported in Chengdu, in the south-west, where troops are said by diplomats to have opened fire on protesters, killing as many as 100, and injuring many hundreds more.

In the capital, Peking radio warned residents to stay indoors "to protect their lives." Chinese television last night broadcast statements by Yuan Mu, a government spokesman, who characterised the present turmoil as a "life and death struggle for the Communist Party and the nation," and showed contempt for international criticism of the actions of the People's Liberation Army.

He said that "some countries even reprove us" for the weekend's violence, but, aware of the mounting moves to impose sanctions on China, asked: "If the government collapses, what is the use of loans and credits?"



Tanks – said by residents to belong to the 27th army – guard the Second Ring Road intersection in east Peking yesterday

The US, Britain and France have all announced sanctions and other Western countries and Japan are considering their positions.

Peking remained paralysed yesterday with many roads blocked by debris from the weekend clashes. Bus blockades remain in place in the east of the city, and gutted military vehicles have been left to rot in the west. Troops have closed off large sections of a ring road that links the east and west, and most offices and shops remained shut.

Other reports, Page 4

France and UK take action against Peking

By **Robin Pauley** and **Philip Stephens** in London and **Ian Davidson** in Paris

FRANCE AND Britain yesterday took action to underline the widespread international condemnation of the crackdown by the Chinese authorities on pro-democracy demonstrators in Peking.

The French Government announced a freeze on all official relations with the Chinese Government. Britain said it would ban arms sales to China, suspend all ministerial exchanges between the two countries and, by implication, cancel the visit to China planned by the Prince and Princess of Wales later in the year.

London, meanwhile, yesterday flatly rejected growing calls from Hong Kong that it should respond to the crisis in China by offering full rights of settlement in Britain to up to 3.5m of the colony's citizens.

Its rejection came as Sir Geoffrey Howe, the Foreign Secretary, announced that the Government would follow Washington in banning arms sales to China. The arms ban, however, will have only a symbolic impact because total sales in 1988 accounted for only £3m ($4.7m)of exports worth more than £400m. President Bush has banned all commercial arms sales and government to government sales to China.

The French action, announced by Prime Minister Michel Rocard, falls short of a break in diplomatic relations, although all official contact between the French Government and the Chinese regime will be interrupted at every level.

France is urging its 12 partners in the European Community to work to co-ordinate their responses to the Chinese actions. However there is so far no co-ordinated EC action beyond a statement issued by the 12 from Brussels yesterday condemning the crackdown.

In the House of Commons, Sir Geoffrey also indicated that in the light of events in Peking, he would look sympathetically at calls from within Hong Kong for speedier progress towards the introduction of democracy over the next few years.

He said the Government was "considering urgently what further steps can be taken to enshrine and protect Hong Kong's freedoms and way of life" after the colony's transfer to Chinese rule in 1997.

He echoed earlier comments by Mrs Margaret Thatcher, the Prime Minister, expressing the Government's "outrage, horror and total, utter condemnation" of events in Peking. Mrs Thatcher said the commitment to a secure future for Hong Kong was "as firm as ever."

Both made clear, however, that their promised efforts to help to restore confidence would not extend to reversing the provisions of the British Nationality Act, which denies UK settlement rights to Hong Kong holders of British Overseas National passports.

Sir David Wilson, Governor of Hong Kong, is expected to press widespread local demands for them to be given full passports. He is due in London tomorrow and will give evidence to a select committee of MPs considering arrangements for the future of Hong Kong.

Sir Geoffrey, however, indicated that the most the Government was prepared to do was to look flexibly at the provisions in the Nationality Act which allow it discretion in granting entry rights to specific groups in the colony.

One suggestion at Westminister last night was that the Government might offer full passports to some Crown servants

Victorious Solidarity seeks new talks with government

By **Christopher Bobinski** in Warsaw

MR LECH WALESA, the Solidarity leader, proposed new talks with the Polish Government yesterday to resolve the political impasse following Sunday's elections. These resulted in a crushing vote of no confidence in the country's Communist Party rulers.

Mr Walesa told reporters in his hometown of Gdansk that the talks should "take into consideration the results of the elections." Official results have still to be published.

"Poles have expressed their wish for new solutions and we must fulfil their expectations," he added, evidently seeking to respond to an increasingly radical mood among his supporters.

The original round-table agreement came after two months of talks between Solidarity and the government earlier this year. It committed both sides to gradual political and economic change and fully democratic elections in four years' time.

Under the pact, Solidarity was legalised as a trade union and free elections were held at the weekend to an upper parliamentary chamber, as well as to the lower chamber, the Sejm, in which Solidarity was guaranteed a 35 per cent share of the seats.

Mr Walesa did not clarify how far he wanted to go in modifying the agreement, but his statement was markedly more radical than the approach of Solidarity leaders yesterday.

Speaking in Warsaw, Mr Bronislaw Geremek, a leading strategist in the movement, said Solidarity was ready to fulfil the round-table accords in their entirety. He made no mention of any possible new talks.

He also said the very strong support for the union's candidates, who look set to take all but one of the 100 senate seats, as well as filling their allocation in the Sejm, represented a vote for "the policies of dialogue and compromise with the authorities."

Both radicals and moderates within the Solidarity movement face problems because of the failure of the government's national list of 35 names to win election to the Sejm, even after Mr Walesa had urged support for these candidates. The national list was made up of prominent officials from the

Continued on Page 26

RJR Nabisco sells five food companies to BSN for $2.5bn

By **George Graham** in Paris and **Lisa Wood** in London

BSN, the leading French food group, yesterday thrust itself into the front ranks of the world food league with an announcement that it is to pay $2.5bn to acquire five European biscuit and crisp companies from RJR Nabisco.

The deal, at the top end of analysts' estimates, pre-empts a controlled auction for the businesses which was to have started today in London. Prospective purchasers were to have given preliminary indications of which businesses they were interested in.

Food companies tipped as likely suitors had included United Biscuits and Northern Foods in the UK, Frito-Lay, the US subsidiary of PepsiCo, and Borden, the US food group. United Biscuits said: "We are naturally disappointed not to have the opportunity to bid for the two continental companies."

BSN, however, wanted to have the deal in the bag before today's deadline and Kohlberg Kravis Roberts, the US leveraged buy-out specialists wanted a swift deal.

KKR acquired Nabisco in December, and financing arrangements for the $25bn KKR offer required debt repayments of more than $5bn by early 1990. The sale of the European food businesses was the first part of planned disposals.

Mr Louis Gerstner, chief executive of RJR Nabisco, said: "BSN came in with a pre-emptive bid. It agreed to buy all the businesses in a single transaction at the upper end of our price range and close the deal quickly."

Mr Gerstner said an announcement on other disposals would come within the next 10 to 12 weeks. No decision, he said, had been taken over whether Del Monte, the fruit business, was to be sold.

The five companies will put BSN, one of the leading European groups in sectors such as beer, mineral water and dairy products, on to an even footing in the European biscuit market with United Biscuits of the UK.

The purchase will reinforce BSN in Italy, through the acquisition of Saiwa, and in its domestic market, where the Nabisco subsidiary Belin will give it an estimated 45 per cent market share.

In the UK, where BSN was only weakly represented until the acquisition last year of the HP Sauce and Lea & Perrins businesses, the purchase will place the French company first in the crisp and snacks market through Nabisco's Smiths and Walker divisions, and second in biscuits through its Jacob's subsidiary.

BSN said the five divisions together represented sales of around FFr8bn ($1.19bn) and net profits of FFr620m in 1989.

With an estimated FFr1bn to FFr1.5bn of cash and a FFr4.5bn bank facility, BSN will have to borrow some FFr10bn to pay for the five Nabisco companies. The company is expected to tap the equity market in some form in the coming months.

MARKETS

New Zealand
Barclays Index

INTEREST RATES
US lunchtime
Federal Funds $9\frac{3}{16}$% ($9\frac{5}{8}$)
3-mth Treasury Bills: yield: 8.416% (8.552)
Long Bond: $104\frac{27}{32}$ ($105\frac{1}{32}$)
yield: 8.421% (8.377)
London
3-month interbank: close $14\frac{1}{16}$% (same)

STERLING
New York lunchtime
$1.5725 (1.5670)
London:
$1.5695 (1.5815)
DM3.1025 (same)
FFr10.5500 (10.5400)
SFr2.6900 (2.6825)
Y224.25 (224.50)

DOLLAR
New York lunchtime
DM1.97315 (1.9820)
FFr6.7065 (6.7395)
SFr1.7065 (1.71325)
Y142.80 (142.825)
London:
DM1.9770 (1.9625)
FFr6.7225 (6.6650)
SFr1.7140 (1.6955)
Y142.90 (141.85)

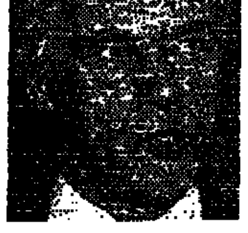
GOLD
New York latest
Comex August
$374.5 (370.8)

STOCK INDICES
New York lunchtime
Dow Jones Ind. Av.
2,480.88 (+0.18)
S&P Comp
321.91 (-0.12)
London:
FT-SE 100
2,107.4 (+18.9)
World:
124.97 (Mon)
Tokyo
Nikkei Ave
33,452.01 (-5.07)
Frankfurt
Commerzbank
1,750.7 (-15.6)

OIL
Brent 15-day (Argus)
$18.40 (+0.025) (June)
West Tex Crude
$20.405 (+0.01) (July)

CONTENTS

Danes finally come to terms with the EC



For Prime Minister Poul Schlüter next week's poll is an important test for the Government's radical tax plans designed to bring sweeping changes in personal and corporate taxation and public spending cuts.
Page 3

Bonn drops nuclear reprocessing plans

By David Marsh in Bonn

WEST GERMANY yesterday formally abandoned its DM10bn (£3.2bn) project to build a nuclear reprocessing complex at Wackersdorf in eastern Bavaria and agreed to improve co-operation with France in joint handling of spent uranium fuel.

Veba, the West German energy and chemicals group, is expected to take a stake from the end of the 1990s in an extension of the French nuclear reprocessing complex at La Hague on the Normandy coast. The details, however, are a long way from being decided.

The ending of the Wackersdorf venture, sealed at a Bonn cabinet meeting and then detailed in a joint statement by the West German and French governments, is a highly symbolic setback to 30 years of West German efforts to catch up with France and Britain in nuclear fuel technology.

The Wackersdorf plant, on which DM2.6bn has already been spent, is expected to be turned into a factory to produce solar energy cells, under a plan being studied by the Siemens electricals giant.

The shelving of the Wackersdorf project, launched in 1985 after more than a decade of discussions about building a full-scale reprocessing plant, is likely to heighten Bonn's dilemma over energy policy.

France is making plain that it expects West Germany to open up to imports of its French nuclear-generated electricity as part of future energy co-operation.

Mr Roger Fauroux, French Industry Minister, denied in Bonn yesterday that there would be a "legal link" between opening of the West German market and progress on reprocessing. But, at a joint press conference with Mr Klaus Töpfer, the Bonn Environment Minister, he said the question of French electricity exports would be discussed within future energy collaboration talks with the West Germans.

The Bonn Government is already under attack from the European Commission about its subsidies on purchases of domestic coal by West German subsidiaries to keep coal mines going.

Pressure from Paris to substitute French nuclear energy for German coal-generated electricity will add to its difficulties over pit closures in largely Social Democrat-run areas in the Saarland and the Ruhr.

The Wackersdorf project, the scene of violent anti-nuclear demonstrations in the past few years, was meant to separate around 350 tonnes a year of spent West German fuel into plutonium and re-useable uranium from the mid-1990s onwards. Instead, West German utilities will now be sending burnt nuclear fuel to La Hague for reprocessing beyond the end of the century. The Germans are also exploring a reprocessing offer from Britain's Sellafield complex.

"Stop the nuclear madness" says a banner in a demonstration against the plant last year

West German utilities, which have financed a large part of the overall DM15bn construction costs of La Hague, have already been sending spent fuel to Normandy since 1976. A total of 1,600 tonnes of West German fuel has been reprocessed at La Hague, with 860 tonnes of spent fuel currently stored there ready for reprocessing in coming years.

The French nuclear fuels concern Cogema is offering a price for reprocessing from the end-1990s onwards which is about one third the prospective price of Wackersdorf.

Wackersdorf has been abandoned because the political and economic cost of the plant has grown out of all proportion to its benefits. In view of the large drop in international nuclear plant construction, and the virtual elimination of plans to build commercial-size plutonium-burning fast breeder reactors, the energy value of the plutonium produced in reprocessing plants has dropped dramatically.

West Germany has run since 1971 a pilot reprocessing plant at Karlsruhe in the south which has separated more than a tonne of plutonium. However, a prime aim of a generation of West German nuclear lobbyists – including the late Mr Franz Josef Strauss, the former Bavarian Premier – was to advance in the nuclear fuel cycle by developing full commercial expertise in plutonium-separation, a technology originally harnessed by the US, Britain, the Soviet Union and France to make nuclear bombs. That plan has now been formally buried.

EC move on car exhaust standards

By Tim Dickson in Brussels

AN ELEVENTH-HOUR initiative to force the European Community to adopt a 1991 deadline for tough new car exhaust standards looks likely to be staged by West Germany when EC Environment Ministers gather in Luxembourg tomorrow.

EC diplomats say that the move by Bonn, announced late on Monday night by the Federal Republic's Transport Minister, Mr Friedrich Zimmermann, and expected to be supported by the Netherlands, Denmark and Greece, could complicate what many are hoping will be the final lap of the highly charged "clean cars" debate.

Events have moved fast in the last few months, with the European Commission's dramatic conversion to the highest "US style" emission standards for small cars, which Brussels says should be compulsory in Europe by 1993.

Previously reluctant member states like Britain and Italy (and possibly even France and Spain) have also shifted their position, with the result that a qualified majority for the more ambitious emission levels is now virtually assured.

The so called "green" group of countries have long shown their impatience at the slow pace of developments in Brussels but the risk they run in now pushing for an earlier date is that they could break the fragile consensus on 1992 that already exists.

Britain, France and Spain will almost certainly argue against any change in the timing, not least because they say the West German car industry is well equipped to instal the necessary catalytic converter technology and will thus reap a considerable and unfair advantage.

Many suspect that West Germany's real motivation is to up the ante in the inevitably fractious debate tomorrow on how to control member states who offer immediate tax incentives to consumers buying cars with the higher standards.

France and Britain are worried that these are a distortion of the internal market.

Jobless rate dips

The EC unemployment rate dipped slightly in April to 9.3 per cent, official EC figures show, Reuter reports from Luxembourg. The seasonally adjusted rate fell from 9.4 per cent in March, but there were still signs that the decline in the rate since October 1984 was slowing, said the Eurostat statistical office .

W Germany cuts benefits for East bloc immigrants

By David Marsh in Bonn

THE WEST German government yesterday announced cuts in social, housing and tax benefits for emigrés from eastern Europe in a move to reduce popular resentment about increasing immigration.

Mr Wolfgang Schäuble, the Interior Minister, yesterday denied that the decision was meant to deter inflows, but it is clearly intended to have some impact in discouraging German nationals from the Soviet Union and eastern Europe from quitting their homes.

The number of immigrants from East Germany, the Soviet Union and other eastern European countries, led by Poland, is expected to rise to 360,000 this year from 240,000 in 1988 and just under 100,000 in 1987.

The trend is due to East bloc economic difficulties and liberalisation of emigration policies. Reflecting the Federal Republic's constitutional recognition of the German nationality of about 4m east bloc citizens, the immigrants have been able to claim generous benefits on arriving in the West. This has inflamed political controversy and given a boost to right-wing parties.

Among other measures, immigrants from the East – about 20 per cent of whom are registered as without jobs – will not have access to unemployment pay.

Those without work will instead receive for 12 months a monthly sum of DM1,000 ($510), billed as "integration money."

Mr Schäuble said the measures would improve the immigrants' overall welcome, while Mr Norbert Bluem, the Employment Minister, claimed the move showed "solidarity."

● Confirmation of a bouncy economic start to the year came yesterday with news from the Federal Statistics Office that German gross national product in the first quarter was a real 4.2 per cent above the same period last year.

On a seasonally adjusted basis, first quarter output rose 3 per cent from the final quarter of 1988.

Booming exports have contributed to overall buoyancy. According to separate figures yesterday, West Germany recorded a trade surplus of DM9.9bn in April, down from DM12.8bn in March, taking the trade surplus in the first four months of the year to DM45.9bn, up from DM34.7bn in the first four months of 1988.

The current account surplus between January and April rose to DM37.1bn from DM 24.7bn the previous year.

Call for unified air traffic control over Europe

By Paul Betts in Paris

DIMINISHING airspace, inefficiency and under capitalisation in some national air traffic control authorities and a serious manpower crisis, together with the issues of sovereignty and protectionism, constitute the biggest threats to liberalisation in European air transport.

Mr Peter Martin, a partner in Frere Cholmeley solicitors, issued this warning at the opening of the Financial Times Commercial Aviation and Aerospace conference in Paris yesterday. He said that until a more unified and uniform air traffic control system was established in Europe, the situation could only get worse.

"Consideration must be given by the European Commission and member states to the making of grants or loans to member and non-member states for the updating of existing air traffic control systems, training and so on," he said.

Other speakers at the conference agreed that pressure is likely to grow on European governments to improve air transport infrastructures.

Mr Geoffrey Lipman, the executive director of the International Foundation of Airline Passengers Associations (IFAPA), argued that a unified air traffic control system was the obvious solution. "A single European market needs a single system of air traffic control," he said, adding that congestion was expected to get worse in the short term.

Mr Wolfgang Philipp, the director of operations of Eurocontrol,the European organisation for the safety of air navigation, also argued that the current political climate for developing a European air traffic control network based on common standards and procedures must be encouraged. He said that if governments wanted to use Eurocontrol as a design authority or consultant to solve the problems "we are at their disposal".

Congestion at airports is undermining efforts to increase airline competition, said Mr Clifford Paice of the Civil Aviation Authority. He argued that congestion problems actually favoured airlines with landing slots at heavily congested airports, while airport infrastructure problems undermined new entrants in

FT
CONFERENCE
COMMERCIAL AVIATION AND AEROSPACE

the market by preventing them access to principal airports.

He urged regulatory authorities to look carefully at the need to build up consumer protection for passengers against exploitation by airlines with privileged positions at principal airports.

Mr Bernard Lathiere, the chairman of Aeroports de Paris, explained that one solution to improve overall transport congestion was to make the best use of the complementary relationship between air travel and new high speed rail systems. This will be the case of Charles de Gaulle Airport in Paris, which will be connected to the French high speed train network.

With the European Commission working on a second set of air transport liberalisation measures to be completed by 30 June, 1990, Mr Stanley Clinton Davis, the former European Commissioner for transport, environment and nuclear safety, explained the EEC's approach to deregulation.

"What the Commission has been striving for is not a free-for-all, not complete deregulation, but rather an approach based on creating order in the marketplace along with opportunities for competitive enterprise," he said.

Mr Clinton Davis also argued that the notion of national carriers was likely to become less meaningful in the future. "We may find ourselves with truly Community airlines on whose behalves rights would be traded with non-Community countries at Community level," he said.

But Mr Gunter Eser, the director general of the International Air Transport Association (IATA), said he did not believe in the emergence of European super-carriers, although there would inevitably be closer co-operation between major European airlines as well as increasing minority cross-shareholdings between airlines.

He added that that aviation nationalism was likely to be eroded by the contraction of state ownership. In turn, private ownership would make it easier to introduce foreign investment in airlines.

He claimed this movement towards foreign investment was as remarkable as privatisation."There are currently several cases in various countries in which foreign investment in an airline has been accepted or is under consideration," he said.

"We are entering a period of profound long-term change, with mergers or partial mergers, plurinational carriers, computer reservation system groupings, commercial alliances, cross-border equity transactions, and other forms of co-operative endeavour between airlines," he said.

Steel market upturn may falter, producers fear

By William Dawkins in Brussels

STEEL PRODUCERS and merchants in the EC fear the upturn in steel consumption could soon run out, the European Commission warned yesterday.

Consumption should rise slightly in the next three months to 29.5m tonnes, up from 28.8m tonnes in the third quarter of last year, according to the Commission's latest forecast. This will be slightly less than production of 32m tonnes for the period, unchanged from the comparable quarter of 1988.

However, steel users and suppliers have been building stocks recently, causing some steel producers to "fear a change of fortunes towards the end of the year," the Commission said. They are also worried that prices might soften because of a recent increase in exports to the EC from Yugoslavia and Turkey, not normally active in European markets.

So far this year, the upturn in steel demand has shown no signs of slackening. EC production in the first quarter of this year reached 36m tonnes, 1m tonnes more than Brussels' own forecasts and 4 per cent more than the same period last year.

This is being driven by a forecast 8 per cent rise in EC investment in equipment and a 5 per cent increase in construction investment this year.

The threat of decline among the steel industry's big customers is strongest in the car industry, where growth should be slower than in 1988, the Commission forecast. While demand for cars is still high in Spain and Italy, the French and West German markets show signs of weakening.

Rising Yugoslav inflation adds to pressure on PM

By Aleksandar Lebl in Belgrade

RETAIL prices in Yugoslavia increased by 23.4 per centlast month compared with April, bringing the rise so far this year to 159 per cent and raising the prospect that inflation for 1989 as a whole could rise to 1,000 per cent.

The latest figures have increased pressures on the new Yugoslav Prime Minister, Mr Ante Markovic, to announce an anti-inflation programme.

He has continued to insist, however, that there is no need for a special programme and - doubtless mindful of the embarrassing failure of similar plans by his predecessors - he has avoided setting targets for getting inflation down. Mr Markovic, sworn in on March 16, has instead pressed with an ambitious deregulation programme. Imports (by both the private and public sector) and prices have been further liberalised, and limits on the withdrawal of foreign currency from private bank accounts were lifted.

The hope is that inflation shoould be squeezed out of the economy through very tight monetary and credit policies, as well as changes in the system of payments for exports to state-trading countries, and the gradual phasing out of promissory notes as means of payment between companies. The authorities broadly project that inflation will tail off towards the end of this year.

Pending approval by the parliament is the revised budget, which for the first time shows all revenues and expenditures of the federation, including the so-called "off-budget" items.

Although in nominal terms at 72,700bn dinars ($727m)it is 333 per cent above last year's (and in view of inflation it could go up by more than that) it will represent 8.5 per cent of the social product, or half a percentage point less than originally planned.

The armed forces have agreed to limit their share of the national income, and will not ask for extra funds to cover their work in subduing protests by the ethnic Albanian majority in Kosovo over the curbing of the province's autonomy.

The Government does not intend freezing prices or wages andMr Markovic expressed hope that the International Monetary Fundwill concur in this.

An IMF team held talks in Belgrade recently about a possible a new, standby agreement of perhaps 18 months, to enter force after the present one year arrangement expires in late June.

The IMF is reported to be insisting on tightening monetary and credit policies, and on institutional changes regarding the role of the central banks, but not on wage controls of the kind which caused widespread discontent last year.

The main aim is to purge it from all remaining provision which allow interference from republics and communes, or political factors, and to enhance the policy of equal rights for all forms of ownership, public, co-operative, private or mixed.

Army 'no threat' to Hungarian reforms

By Leslie Colitt in Berlin

THE POSSIBILITY of an Hungarian Army intervention to save the conservative wing of the Communist Party, as in China, has been debated by Hungarian politicians and generals.

Major General Janos Sebök, a member of the Hungarian Parliament, said the army would "never use force" to stop a process of radical democratisation in Hungary.

Gen. Sebok said the armed forces would respect a new constitution, currently being drafted, which no longer declares the leading role of the Party.

"Our soldiers will not resort to force" he stressed in a recent Hungarian newspaper interview. The role of the military has been raised because of the growing split between radical reformers in the Party who could win a decisive victory over the conservative minority at a party congress next autumn.

A recent poll disclosed that if free elections were held now only 25 per cent of voters in Budapest would choose the Communist Party and less then 40 per cent nationwide.

Gen Sebok cited the example of Poland's leader, General Wojciech Jaruzelski, who he said had "set back" Poland ten years and made the Polish Party "even more unpopular" by declaring martial law in 1981.

The Hungarian general said the army was still under the "control and management" of the Party but that this would be "unthinkable" in the multi-party system being created.

The Hungarian Party leader, Mr Karoly Grosz, however, spoke on May 18 of the need to act against the "depoliticisation" of the armed forces which were constitutionally bound to defend the socialist order.

Naples shines through a tarnished image

Bruce Clark examines the chequered development of Italy's Mediterranean port

IT IS HARD but important not to romanticise about Naples too much. A beauty spot, a planner's nightmare, an aesthete's paradise, a gangster's playground, it mixes joy and misery, fear and exuberance, squalor and refinement so delicately that the term bitter-sweet might have been invented for it.

The *Centro Storico* (historic centre) curling round the bay represents an major slice of Europe's cultural heritage.

Its ill-maintained museum houses some of the greatest surviving pieces of ancient art; there are exquisite churches from most of the last eight centures; palaces, castles and forts. worthy of a once great power.

Yet compared with Venice or Florence, it is scarcely visited by tourists; visitors who make it to the northern outskirts generally prefer to dodge the squalor and take a hydrofoil that whisks them mercifully to the island of Capri, a refuge from the *profanum vulgus* since Roman times, where money seems to drip off the cypresses.

For those who do venture into the *Centro Storico*, there is (given New York-style precautions) on balance more to delight than to repel: luxurious seafront hotels, if you can jaywalk through the traffic to get to them, excellent fish restaurants, and the subtle, ambiguous charm of the Neapolitans.

So the visitor can almost sympathise with his Neapolitan driver who, hopelessly stuck in a maelstrom of rattle-trap cars, sighs wonderingly at the beauty of his native city and invites his passenger to agree that the problem of air pollution has been much exaggerated.

Yet there is nothing romantic about the living conditions of the city's underclass, perhaps 300,000 people out of a total population of 1.3m (2m if you count the suburbs, 5m if you include the hinterland).

The voice of Mayor Pietro Lezzi, a peppery veteran Socialist, cracks with high-pitched emotion as he describes life in the tenements: "Six, seven people in a room, no lavatory, no drains...Unacceptable conditions!"

And only from the comfort of a north European cinema is there much romance about the trade in heroin, kick-backs on building contracts and protection money that is practised by the Camorra, the Neapolitan mafia; or about the fierce shooting wars that rage in the ghetto between rival Camorra factions, struggling to fill a void after the mysterious disappearance last year of chieftain Antonio Bardellino.

If your appointment schedule is not too heavy, you can shrug off the chaos of the city centre as a self-inflicted wound with which the residents are well used to living.

And, faced with the city council's staggering record of incompetence – billions of dollars of aid from Rome and Brussels have passed through its hands like a sieve – you can observe, wryly, that the council is quite effective in its real function, that of keeping 30,000 people in wages.

Naples can, in certain lights, look like a crazy, but internally coherent system.

There is a certain perverse logic, for example, about the fact that garbage collection is due to be privatised this year – while the existing 7,000 collectors, who manifestly fail to do much collecting, remain on the pay-roll.

The *Commune* (municipality) is thus formally separating its role as a provider of employment from its role as a (grossly inadequate) provider of services.

But, there are all kinds of threats to the current system, which has traditionally been oiled by a complex network of relationships between elements of the local political class, the ghetto dwellers whose votes are easily bought and managed, and the underworld.

Naples, a city with strong feudal traditions, has been slow to feel the influence of the social and economic forces that have transformed much of

A chestnut seller winds her way through the narrow, overcrowded and often rubbish filled back streets of Naples

Italy: by the sophisticated, market-oriented neo-capitalists and the liberal neo-Communists who have achieved such happy synergy in many northern cities.

But these forces have not entirely bypassed the Naples area. The Bank of Naples, one of the few institutions of nationwide importance based in the city, reports that, with public companies in somewhat better financial health (not least because of the number of jobs they have shed in Naples), its clients include an increasing number of healthy private companies.

So far this has not been enough to offset the plunge in employment caused by the exhaustion of a lucrative reconstruction programme following the 1980 earthquake, by the decline of shipyards, engineering works and the Bagnoli steel mill.

But the private sector, and the more dynamic bits of the public sector, by now form a powerful enough lobby to agitate hard for an improvement in the city's appalling infrastructure.

Part of Naples' future towers over the city centre a short distance to the south: the high-rise office and appartment buildings of a new business centre, the *Centro Direzionale*: there are car parks, green spaces, and pedestrian precincts, superb transport links, in short everything the *Commune* has never provided.

Mededil, the public construction company which was the driving force behind the project, claims that its initial outlay of L150bn (about $105m) has attracted investments of over L2,000bn. The Bank of Naples headquarters, all the major public utilities any offices of the municipal council will move to the new centre.

But if the *Centro Direzionale* succeeds, what will happen to the *Centro Storico*?

The idea, according to Mededil, is that the *Centro Storico*, freed of commercial activity, will become a pleasant place for tourists to stroll.

Those businessmen who currently avoid Naples will be able, thanks to the new business centre, to get in and out quickly – and they might be tempted to stay and visit a museum.

But is there not a danger that the ghetto – currently only a block away – will simply engulf the *Centro Storico*? The Bank of Naples and a group of private and public companies have an answer for that as well.

Following the principle – well-pioneered by Mededil – of killing the *Commune* with kindness (in other words giving it things it is incompetent to produce for itself), a consortium of companies has presented the municipality with a detailed plan to restore and rebuild the *Centro Storico*, including the many palazzi which are simply rotting.

Mayor Lezzi is cautiously in favour, but some of his fellow councillors are not so sure. The council would no doubt make a huge windfall gain out of the development, but it would lose much of its easily abused power over city centre property.

It is hard to gauge how much of the council's hesitation is because of fears, voiced in good faith (in particular by the Communists) of a new speculative orgy, and how much reflects a perceived threat to cosy arrangements between local power brokers and ghetto-dwellers.

But business and local administration moves en masse into the *Centro Direzionale* (or moves out to the suburbs, as much wholesale activity has already done) and nothing is done about the *Centro Storico*, the latter area's decay could accelerate to the point of no return.

The area housing some of the world's greatest cultural treasures could become not merely squalid, but impassable. As though the Acropolis was located in the South Bronx.

EC subsidises transport link

THE European Commission is to promote better transport links between the Community's 12 member states by offering Ecus 60m worth of interest rate subsidies on major road, rail and air traffic projects.

Priority will be given to high-speed train links ranging from Amsterdam and London in the north-east of the Community to Lisbon and Seville in the south-west; the Brenner pass across the Alps; upgrading of European air traffic control; the North Wales coast road; and Greek road improvements.

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EUROPEAN NEWS

Danes finally come to terms with EC

Membership of the Community is no longer a campaign issue, writes Robert Taylor

WHEN DENMARK goes to the polls next week in the European election it will be the first time that continuing membership of the European Community will not be an important campaign issue.

Perhaps even more reluctant Europeans than the British, the Danes have become reconciled to the EC only after a long period of doubt and suspicion that was finally ended in February 1986 when 56.2 per cent voted in a national referendum to support the Single European Act and the formation of the internal market.

As a result, the non-party (though mainly left-wing) group known as the People's Movement Against the EC stands to lose perhaps half the four seats out of Denmark's 16 it holds in Strasbourg at the moment. In 1984 the Movement polled as many as 20.8 per cent of the total Danish vote, higher than any political parties except the Conservatives.

Mr Jens-Peter Bonde, who heads the People's Movement list in the current election, however, believes the group will hold its ground, arguing that it will speak with a firm voice in Strasbourg on environmental and social questions but at the same time call for a looser Europe through a future convergence between the EC and the European Free Trade Association.

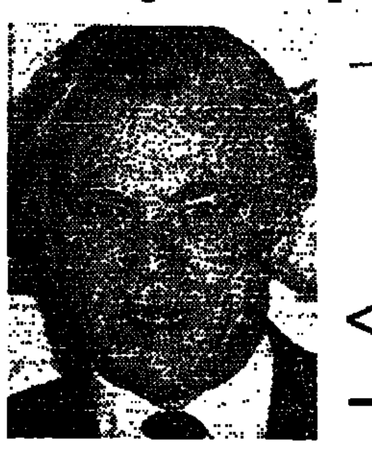
"It is a very open election," he claims. "Danes remain very schizophrenic about the EC for there is very little support for any move to closer political or economic union."

Observers believe that the Social Democrats, Denmark's main opposition party, who have three seats in Strasbourg, could perhaps double their representation this time at the expense of the People's Movement. After many years of internal division over the EC question, the party has become a strong EC supporter, backing the European Socialist Manifesto with enthusiasm.

The latest national Gallup poll shows that the Social Democrats have 30.6 per cent support among the electorate and they seem likely to benefit from the fact that the differences within Danish politics over the EC are becoming more defined along traditional right-left differences.

For Denmark's Prime Minister, Mr Poul Schlüter, and his Conservative party next week's poll is turning into an important test for the Government's radical tax plans that were unveiled just over a week ago which are designed to bring about sweeping changes in personal and corporate taxation and public spending cuts.

Personally rather unenthusiastic about giving the Strasbourg Parliament greater powers, Mr Schlüter nevertheless is campaigning fairly energetically because he regards the tax plan as an important contribution to preparing Denmark for the dynamic of the 1992 internal market.



Prime Minister Poul Schlüter: important test for tax plans

However, perhaps only the Liberals are out-and-out enthusiasts for a more integrated EC. They have the most exciting candidate, in a rather dull national list, in Mr Klaus Risker Pedersen, a rich young financier, but, with only two seats at present, they seem unlikely to will make any significant gains.

Mr Schlüter's other coalition partner, the Radicals, have demonstrated yet again their traditional eccentricity by making a tactical electoral alliance with the Social Democrats, adding confusion for voters. Although they are unlikely to win any seats, their decision must put a question mark over their long-term commitment to the Government.

The populist Progress party, which failed five years ago to capture any seats in Strasbourg, is riding high in the national polls. With its anti-tax image and 12.6 per cent of the vote in the latest opinion survey, it can expect some representation this time on the fringe of the Parliament.

However, the outcome in Denmark will depend very much on the size of the turnout. In 1984 only just over 52 per cent bothered to vote, the lowest figure of any European country except Britain, and the present feeling is that the figure will not be much different this time. The party campaigns have hardly begun and there has so far been very little media coverage of the election, which appears to be leaving most Danes rather indifferent.

But this mood of apathy could change. Many Danes are generally worried that their welfare state and their environment could be threatened by a lowering of standards to bring their country into line with the rest of the EC.

All parties recognise that they are going to have great difficulty harmonising the Danish indirect tax rate (22 per cent on all items) with the rates the EC intends to introduce without large cuts in public spending that most Danes would find unacceptable.

"This time the main parties are united on seeking to crush anti-EC sentiments," says Mr Mikael Bramsen, head of the European Parliament office in Copenhagen. "They are now saying we have got to get the best for Denmark out of the present system. This is new."

OECD prescribes more bitter medicine for Dutch economy

By Laura Raun in Amsterdam

THE NETHERLANDS should continue to pare its over-sized public sector, its bulging budget deficit and high unemployment, according to the Organisation for Economic Co-operation and Development.

In its latest Dutch economic survey, the OECD also urges further cuts in the heavy "collective burden" of taxes and social security premiums, and curbs on generous transfer payments that distort the economy.

Tighter criteria should be imposed for claiming jobless benefits and the linkage between the minimum wage and minimum income should be broken, the OECD recommends.

"The economy is already relatively well placed to take advantage of the opportunities created by the European Single Market," the survey notes. "But prospects for meeting these new challenges would be enhanced if adjustments achieved so far could be consolidated and carried further."

The latest survey, which covers two years instead of the normal one, echoes much of the sober advice given in the past. But such bitter medicine is unlikely to find many receptive patients among Dutch politicians with the September 6 general election looming.

The survey does paint a rather rosy macroeconomic scenario, much in line with the government one published in May. Growth in gross domestic product is seen accelerating to 3.2 per cent this year from 2.7 per cent in 1988 and remaining stable at 3.1 per cent in 1990.

> 'The economy is relatively well placed to take advantage of opportunities created by the Single Market'

Consumers will pick up some of the slack left by slowing growth in exports, spending 3 per cent more this year than last. Exports of goods and services are forecast to rise by 5.7 per cent this year, but that compares with a buoyant 7.5 per cent in 1988.

Both consumer spending and exports are expected to continue to expand at about the same pace in 1990 as this year. The OECD believes inflation will accelerate from 0.8 per cent in 1988 to 1.5 per cent this year and to 2.3 per cent next year, faster than government forecasts.

Investment growth will taper off sharply to 5.5 per cent this year from 7.9 per cent in 1988 and plunge to 1.1 per cent in 1990. The unemployment rate is seen as dwindling only slowly – from 8.3 per cent last year to 8.1 per cent this year and 7.8 per cent next.

The current account deficit should narrow to Fl 6.5bn (£1.8) this year against Fl 10.6bn last year, but widen again to Fl 9.5bn in 1990.

The survey acknowledges that economic performance has improved in recent years as a result of "cautious demand management policies, structural reforms," domestic wage restraint and a favourable international environment.

But it argues that if greater improvement is desired then wage moderation must continue, state-debt interest payments must be stabilised and general efficiency of markets must be enhanced.

The housing market should be made much more flexible by gradually scrapping widespread rent controls and massive subsidies for renters, the OECD contends. The labour market would function more efficiently if the educational system were better linked to the business community so that school-leavers' skills matched market demand.

Constituency Profile: Cotswolds

Lord Plumb pats his ample credentials

THE PLACE was medieval Gloucester, under the honey-coloured stone arches of the Cathedral's Chapter House, where the Doomsday Book was conceived. The occasion: the first joint public meeting involving all four candidates in the Cotswold constituency for the elections to the European Parliament.

Lord Plumb, president for the last two-and-a-half years of that institution and Tory candidate, listed his qualifications for talking about third world development, the subject chosen for the meeting by its hosts, the World Development Movement.

"I am totally committed to it", he declared. Patting his tummy, he added that, as well as chairing last year's much publicised world food conference, leading the parliament's discussions on third world aid and being a member of the parliament's development committee before he became president, "last year I lost 22 pounds in weight to raise money for intermediate technology. I'm also a patron of Farm Africa and my son is a missionary in a remote part of Argentina where I've spent many weeks."

No one can match the impeccable past of the parliament's president, writes Bridget Bloom

All the other candidates could do, deflated by such experience, was to say that they, too, believed in development.

The third world is hardly a big issue in the campaign in the Cotswolds, a huge and prosperous wedge of southern England whose wide acres, rolling hills and lush woodlands stretch from Cheltenham and Gloucester in the south west, north westwards across the stone-walled spine of the Cotswold hills themselves to Stratford-upon-Avon and Banbury.

But the incident serves to describe the number one issue in the Cotswold campaign: Lord Plumb's credentials to be the next MEP far outweigh those of his opponents. "It's a case of the minnows and the whale," said a party worker.

It also helps of course that the constituency comprises seven Westminster ones, each of them returning a conservative member in the last general election.

It will be surprising if Lord Plumb does not win on June 15, even if many voters in the constituency seem confused as to exactly what elections these are or, if they know that, then precisely what it is that the European Parliament does and why.

For those who do know and care about the election enough to vote, Lord Plumb is known first and foremost for his experience in agriculture, one of the principal issues which was getting an airing as the campaign got under way last week.

As his progress round Banbury cattle market confirmed, Lord Plumb is exceptionally well known by farmers – he is one himself and he made his way up through the National Farmers' Union as plain Henry Plumb to become its president for much of the 1970s.

In the Cotswolds there are many mixed farms and the downturn in the fortunes of arable crops is mitigated currently by the increasing prosperity of dairy farming – thanks to the Community's quota system, as well as by the great demand for every available stone barn or cottage which this most beautiful, if highly manicured, countryside has to offer.

Lord Plumb claims for the European Parliament and his role there some credit for the reform of the common agricultural policy and gets quite angry with his opponents who reel off "four-year-old statistics" on the size and costs of the food mountains. He reels off his own, showing how the milk lake has evaporated and the wheat and butter mountains are now molehills.

Lord Plumb's statement for the constituency press last week (a lone local reporter turned up to the Banbury press conference) stressed that his campaign was being fought to keep socialism at bay. He distanced himself from the bitter criticisms by Edward Heath, the former Prime Minister, of Mrs Margaret Thatcher's approach to the Community. Publicly there was no mention of his own more temperate but equally trenchant criticisms over the last few weeks, though from an interview later it was clear he remains disturbed by the negative approach of his leader.

The other candidates are putting a brave face on Lord Plumb's pre-eminence, each hoping to discover his Achille's heel. Tom Levitt, the gentlemanly young Labour candidate who fought Stroud in the general election, thought that the Tory splits on Europe, together with those amongst Liberals and Social Democrats, would at least mean Labour comes a good second. Leslie Rowe, the bearded Democrat, emphasises the Tories' isolation in the Strasbourg Parliament

But it is the personable Sue Limb, the Green candidate who seems to be having the most fun. She is the author of the gently satirical series on BBC radio 4 The Wordsmiths of Gorsemere (a parody of the Lake poets) and writes a newspaper column entitled Bad Housekeeping, as well as one for the Good Housekeeping magazine. Her single-theme campaign, ranging from food safety to pollution by farmers and the motor car, is without doubt the flavour of the month in the Cotswold campaign, so much so that, in separate interviews each of the other candidates insisted that it was they, not she, who was wearing the green mantle.

Does Lord Plumb have an Achilles's heel? He does not give the impression that he much likes the electoral hurly-burly. "I'm often treated like a head of state as president of the parliament", he says, adding that having "my ear pinched and being told to move on in the shopping precinct is no doubt good for my soul".

Lord Plumb says he did not join the Conservative Party until 1979 when he first became the Cotswold MEP, because he wanted to be seen as maintaining impartiality as an NFU official. He presents his role as president of the parliament (an office he does not formally relinquish until July) in that light too.

Barring an accident, Lord Plumb will be back in Strasbourg after June 15 – though not, he says, as president. The former President of the French Republic, Valery Giscard d'Estaing seems his most likely successor.

Rumours lift spirit of a devastated people

Robert Thomson sifts fact and fiction from a Peking awash with gossip

THE PEOPLE of Peking want to believe many things about their crisis-stricken city. There was the story yesterday about the communist party chief, Zhao Ziyang, a liberal and the man most Chinese would like to see running the country, and there was one about Li Peng, the Premier and probably the most despised man in China.

According to the talk on the streets, Zhao, who has been under house arrest for alleged conspiracy, has escaped from custody, linked up with sympathetic troops, and is about to liberate Peking.

Li Peng – gossip and a Hong Kong newspaper claimed – has been shot in the thigh in an assassination attempt by one of his guards, who had relatives among the victims in the weekend slaughter. The guard himself was killed after the shooting.

That these and other rumours are widely believed here is partly because the incredible has become commonplace in recent days, and partly because of the absence from public view of communist and military leaders.

No leader has made a public statement in the past week, and Zhao, Li, and Deng Xiaoping, the paramount leader, have not been seen for two weeks.

Deng has been the subject of several conflicting rumours. A Hong Kong newspaper yesterday pronounced him dead, a claim denied by a government spokesman, and he is said to be in hospital suffering from either cancer of the prostate or a heart condition that has left him unable to run the country.

These reports could be true, but as the leadership has returned to a cultural revolution-like closet, they cannot be confirmed.

Reliable Chinese sources said last week that Deng was receiving medical treatment, including oxygen, but that he was still capable of running the country. It has also been said that Deng has been toppled in a coup by the President, General Yang Shangkun, who was almost certainly responsible for authorising the use of force against the protesters.

The People's Liberation Army, too, has been the subject of many street-level stories. The 27th army, whose leadership has family ties to General Yang, is held responsible for most of the brutality, while the Peking-based 38th army, thought of fondly for refusing to obey a martial law order to crackdown on the students, is believed to be massing for an attack.

In the west of the capital yesterday, a convoy of troops was reported to have claimed that they belonged to the 38th, prompting local residents to offer them drinks and food, and to clear barricades erected to obstruct the 27th. After the troops passed through, the residents suspected they had been deceived by soldiers of the 27th.

Troops from the 38th are said to have entered the city twice yesterday, once from the south and later from the west, and, in the evening, they were said to have given the soldiers of the 27th an ultimatum to lay down their weapons or be attacked.

These reports represent glimmers of hope for a devastated people, a people who have become accustomed to hearing the sound of gunfire, whose offices and factories are closed indefinitely, and whose future has been suddenly overturned.

They are still a defiant people. Photographs of victims of the weekend's violence have been pasted to lamp posts around the city, and soldiers continue to be berated at close range by small groups of citizens, some of whom have been killed in reply.

The numbers killed in the past few days is almost impossible to estimate.

An official radio report on Sunday, broadcast once and then silenced, said that more than 1,000 had been killed. Hospital officials have estimated that 1,400 people died and students say the figure is at least 4,000.

In the first official comment on casualties, a government spokesman said last night that only 23 pro-democracy demonstrators were killed, the spokesman claimed that "2,000 gangsters" were injured, 300 troops were killed, and another 400 missing, though he admitted the toll "is not very accurate."

The argument over numbers will never be settled, though the government estimate is the most obviously wrong. There have been numerous rumours floating about the city of a massacre on Tiananmen Square in the early hours of Sunday, when the majority of foreigners were out of view, having been forced away at gunpoint by soldiers.

One report suggests that 5,000 or more students died when troops opened fire with machine guns on the Square. Another suggests that the thousands of bodies were then burned and have been airlifted to a mass grave in the west of the city. Both reports are wrong. I was among the very few remaining on the square when the students were forced off by tanks and armoured personnel carriers, and by soldiers firing sometimes into the air and sometimes not.

Protesters died on the square, but the number was small. The 27th army did most of its killing elsewhere in Peking.

Alone in the rain: A Peking citizen makes his anti-government feelings known

Frantic foreigners scramble to escape the chaos

By Our Foreign Staff

FOREIGN governments and businesses around the world were yesterday scrambling to get their citizens out of China's chaos as fears of civil war grew.

Some governments including Britain chartered special aircraft for a mass evacuation and most major Western countries told their nationals to get out of China as fast as possible.

Australia, Canada, the US, all the EC states and Sweden all advised their nationals to leave. Sir Alan Donald, the British Ambassador to Peking, urged the 850 Britons in China to leave quickly, especially those in Peking. He gave refuge in embassy accommodation to 60 British students on Monday night. Yesterday he chartered a British Airways Boeing 747 which was diverted from Hong Kong to airlift some Britons out to London.

Other chartered flights organised by Hong Kong, Australia, and Japan started to evacuate businessmen, journalists and the families of diplomats from Peking yesterday, mainly to Hong Kong although some have gone to Tokyo. The flights were organised as a growing number of countries and companies decided to move families and non-essential personnel out of Peking and other parts of China including Shanghai and the northern provinces.

Companies involved include Xerox and McDonell Douglas of the US and Alcatel of Belgium, all of which have joint ventures or other collaborations in Shanghai.

The Australian government advised all non-diplomats to leave China. Senator Gareth Evans, the Australian Foreign Minister, ordered a Boeing 747 of Qantas, the national airline, to Peking to fly out Australian citizens today. Qantas engineers who went on strike, grounding all scheduled flights yesterday, exempted the evacuation flight.

In most cases, companies with only one or two expatriate staff seem not to be evacuating yet. But companies with bigger expatriate groups are pruning back the numbers. Some companies including Ericsson of Sweden are also moving families out of the southern province of Guangdong.

Around 2,000 frantic foreigners crowded into Peking airport yesterday to await the first plane out.

EC ambassadors met in Peking to decide joint action. They said tourists and businessmen should get out as fast as possible on commercial flights. Some EC countries were asking national airlines to provide bigger planes to bring out more passengers on scheduled flights. The US also said it would not organise special transport for its citizens who were advised to leave as fast as possible on commercial routes. But as commercial flights were becoming fully booked Mr Jens Odlander, a Swedish Foreign Office spokesman, said Sweden and the other Nordic countries might charter an airliner to get Nordic citizens out.

The EC diplomats also said long-term residents should leave, but it was up to them to decide. No EC embassy had yet decided on evacuation of staff. But West Germany and Greece advised families of diplomats to go.

The West German travel agency association (DRV) said all German tourist groups would be flown out of China in the next few days and tours there would be suspended indefinitely. Mr Otto Schneider, DRV President, said about 200 West German tourists remained in China.

Governor 'to back HK passports demand'

By John Elliott in Hong Kong

SIR DAVID Wilson, Governor of Hong Kong, is expected next week to put his personal weight behind widespread local demands for up to 3.4m people to be given British passports in an attempt to bolster flagging confidence in the British colony.

He will do this publicly when he gives evidence in London to the House of Commons Foreign Affairs committee. He will also air other Hong Kong demands relating to the situation in the colony which reverts to Chinese sovereignty in 1997.

There is mounting anger and anxiety in Hong Kong following the Chinese army atrocities in Peking, although the local stock market recovered yesterday from a dramatic slump on Monday when the Hang Seng index fell by just over 21 per cent to close at 2,093.61. Yesterday it recovered by 56.1 points and closed at 2,149.71.

The sharp drop in confidence is demonstrated by a rapid increase in the number of preliminary approaches to foreign consulates for emigration details. The Australian consulate, which normally handles about 100 inquiries a day, had 250 a day last week rising to 400 yesterday.

Demands are starting to be aired by a broad spectrum of opinion that Britain should cancel its 1984 agreement with China for the People's Liberation Army to be stationed in Hong Kong after 1997.

There are also renewed demands for the UK to give a right of abode in Britain to up to 3.4m people who would qualify as its full citizens but for immigrations laws passed since the 1960s. The British government has resisted calls to issue these people passports because, it argues, it could not pass the necessary legislation through Parliament.

However there is a growing body of opinion in Hong Kong opinion, ranging from British businessmen to liberal Chinese–born democracy campaigners, who argue that the recent events in Peking should be a sufficiently strong catalyst to change Parliamentary opinion.

Sir David is also expected to give some support to other local demands relating to the Basic Law - the colony's mini-constitution after 1997 which is now being drafted by Peking.

Time cushion only comfort for sad colony

John Elliott on the mounting pressure for changes in the post-1997 constitution

"AFTER SEEING the student movement in Peking I am more proud to be Chinese and so I want to use my Chinese name," said the managing director of a Hong Kong construction company, writing his Chinese name of Chan Ka-Kui on a visiting card in place of the printed westernised version of K.K. Chan.

Last night Mr Chan, 39, led a march of 100 surveyors to the local Xinhua News Agency offices, the *de facto* Chinese embassy in Hong Kong, to add floral tributes to the mountain of wreaths to the Peking dead piling up outside the building, and to hand over a letter of protest.

His reaction is typical of the flood tide of emotion that has swept through this British colony in the past few weeks, and especially the past few days. With large marches and demonstrations of over 500,000 people – another takes place today – a previously latent Chinese nationalistic feeling has been revealed.

But contradictory reactions have also been spawned displaying a mixture of hopes and fears about life after 1997 when Hong Kong returns to Chinese sovereignty.

"The masses who had no view about how to react to 1997 and were waiting to see what would happen will now go to one extreme of wanting to leave or the other of wanting to stay and fight for democracy," said Mr Steve Chan, one of the leaders of the Hong Kong Federation of Students who are at the forefront of the marches.

"If everyone goes, who will stay to contribute for Hong Kong?" asked Mr Andrew To, a 23-year-old social studies undergraduate who is the federation's secretary general. "I was born here and I feel I should contribute so I shall not leave."

The Peking students' movement and the early gentle government reaction initially spurred hopes that China would become more democratic and so would more easily assimilate Hong Kong. Last weekend's army atrocities have made many people – especially young people – even more nationalistically determined to help the Peking democracy movement.

"Two months ago I was thinking I might emigrate with my wife and two children and now I am thinking of that more actively," said Mr Chan. "But unlike some people I can afford financially to wait and see what happens closer to 1997, and I want to stay and help build a country we are proud of. I hope the Peking Government will change and I want to contribute here so I am not ready to go yet."

But it has also made many people even more determined than before to obtain foreign passports quickly as an insurance. Most people feel resigned to the 1997 handover and this is making many of them clamour for Britain to change its immigration laws

There is also general acceptance that there is no alternative to the idea, initially put forward by Peking and then accepted by the UK in the 1984 Sino-British joint declaration on the handover 1997, that there should be "one country, two systems."

This would mean that Hong Kong (as well as the Portuguese enclave of Macao in 1999, and maybe Taiwan later) would continue its present capitalistic system and slowly develop its democracy within communist China.

"Is one country two systems realistic - it's all we've got isn't it?" says Mr David Gledhill, chairman of the John Swire and Sons in Hong Kong, one of the colony's big groups. "There is no way Britain is going to hang on here, so we have to make that work. But the UK must provide passports as a last bolt-hole because then people can use that to rebuild confidence – otherwise watch the immigration figures soar."

Mr Simon Murray, managing director of Hutchison Whampoa, another of the biggest groups is even more outspoken. "The calm voice of Sir Geoffrey Howe from his deep armchair about not worrying about the future has been blown away by gunfire. Britain must do something that will give us some heart. This is the UK's moment to rethink the accord with China."

However there are also more despondent voices because people doubt the UK's backbone. This view is strongly held by Mr T.S. Lo, a prominent lawyer who resigned from the colony's executive and legislative councils in 1984 in protest at the UK refusing to issue British passports, and now heads one of Hong Kong's new political parties.

"I don't think it is realistic to expect to have two systems, with a democratic government here inside a country which is not a democracy," he says. "But we have got to work within the Peking framework because, in my view, we can do nothing against China unless we want to have a revolution. So we must keep cool and realise we are part of China."

However, there are growing demands for improvements in the Basic Law which will govern Hong Kong after 1997 and is now in its second draft. A final draft was due to be prepared in Peking by the end of the year but now will almost certainly be delayed.

There are general demands for the Basic Law's introduction of universal franchise speeded up, plus more provisions to guarantee human rights and the legal autonomy of Hong Kong.

Demands are also being revived that China's People's Liberation Army should not occupy garrisons in Hong Kong but be stationed in the adjacent Chinese province of Guangdong. This is being argued by public figures as disparate as Mr Gledhill and Mr Martin Lee, the arch-liberal campaigner, who also wants the UK to re-negotiate the Sino-British joint declaration.

From this welter of views it is emerging that it is the youth who are being most politicised and, perhaps because many of them may never be able to obtain foreign passports, want to fight nationalistically for democracy inside China. Those in their twenties or older want British passports and a stronger Basic Law to act as a bulwark against Peking and protect the concept of "one country two systems".

There is also some relief that Hong Kong is having to face up to all these problems now. "It's fortunate for us that all this is happening eight years before 1997 so that there is a time cushion for the government in Peking to change again," says Mr Lo. "Otherwise there would have been a bigger crisis here."

Echo of Peking: Financial workers take to the streets in the business section of Hong Kong yesterday, their banner proclaiming 'Those who spill blood must pay with blood'

Disruption in provinces poses threat of nationwide violence

By John Elliott and Colina MacDougall

PEKING'S hard-line leadership is facing widespread unrest throughout China as a result of the weekend massacres in Peking. Major cities have been paralysed and the economy hit by transport freezes and worker absenteeism. So far troops have not been used to subdue the dissidents, but the prospect of nationwide violence is coming closer.

China's largest city, Shanghai, yesterday saw its worst disruption in the 40 years of communist government, according to Shanghai radio. Local officials were quoted as saying that the municipal economy was on the brink of collapse. Diplomatic observers estimate that production may have slumped by 50 to 60 per cent in what is China's most important economic and industrial centre.

The situation was becoming increasingly tense, though the army, which is in evidence around the city, had not moved into action. On Monday, 123 road intersections in the city centre had been blocked with barricades and more than 500 buses had their tyres let down, Shanghai radio said. City authorities told western missions that they were planning to act to end the disturbances.

In Guangdong, the southern province adjoining Hong Kong, the situation yesterday was calm, though industry was disrupted. No military movements have been reported in the provincial capital, Canton, though on Monday students occupied three river bridges and blocked railway lines.

In Nanjing, on the Yangtse river in central China, residents reported that students and workers were demonstrating on the streets and blocking major transport systems. A student leader from the federation of Nanjing Universities said students wanted a general strike in the city. "We heard military forces are moving in and people were told to stay inside," said one resident. On Monday demonstrations, including mock funerals, completely blocked the city centre and drivers refused to drive in further than the suburbs.

In Chengdu, provincial capital of Sichuan, local radio reported that a "gang of criminals" burned down south-west China's largest department store and looted 21 shops. A crowd set fire to a police station, burned fire-fighting trucks and fought the police with bottles and stones. Clashes between students and troops were reported.

In the central Chinese city of Wuhan, demonstrators blocked China's main north-south railway line for the third day running, holding up dozens of trains. This is certain to cause severe disruption nationwide to industry and food supplies. More than 10,000 students and workers were out on the streets yesterday protesting, chanting anti-government slogans and praying for the slaughtered Peking students.

Lanzhou, capital of Gansu province in the north-west, saw continued blockages of roads and intersections yesterday by tens of thousands of people, and students held up troops outside the city. "You must be careful, don't come here, and if you do, don't go out," said one resident. Hong Kong radio and television issued unconfirmed reports that as many as 200 protesters had been killed by security forces in the city.

In Xian, Shaanxi province, also in the north-west, workers and students blocked the city gates early yesterday morning. The Hong Kong Ming Bao reported that the crowd on Monday exceeded 100,000 and that many workers were on strike. Demonstrators said troops were ready to attack on the west of the city and foreign students at Xian universities were preparing to leave.

In Shenyang, north-east China, students marched to mourn victims of the Peking massacre, and large crowds obstructed traffic on the road to the airport. Demonstrations have also been reported in Harbin, Changchun and Dalian in the north-east, and Qingdao, Loyang and Tianjin in the north.

Moscow condemns world outrage

By Quentin Peel in Moscow

THE Soviet Union yesterday condemned international pressure on China, warning that it would only inflame passions, but appealed for "wisdom, sound reason and a balanced approach" from the Chinese authorities.

The resolution of the Congress of People's Deputies urged China "to continue along the road of economic and political transformations."

The resolution was drafted by the presidium of the Congress, chaired by Mr Mikhail Gorbachev, and clearly seeks to resolve the acute Soviet embarrassment over the turmoil in Peking. The students accused by the Chinese authorities of being "counter-revolutionaries," were carrying slogans trumpeting Mr Gorbachev's reforms.

Ian Rodger adds from Tokyo: Japan yesterday declined to take sanctions against China. "We would like to watch the situation for some time and collect more information before deciding on our approach," said Mr Hiroshi Mitsuzuka, Foreign Minister.

Negotiations have been halted on two large loans, \$120m for Sinopec Petrochemical by Dai-ichi Kangyo Bank with five other banks, and \$25m to the People's Bank of China, China's foreign exchange bank, by the Asian Development Bank and six Japanese banks.

Japan's huge aid programme – it provides 70 per cent of China's bilateral aid – may also be reviewed.

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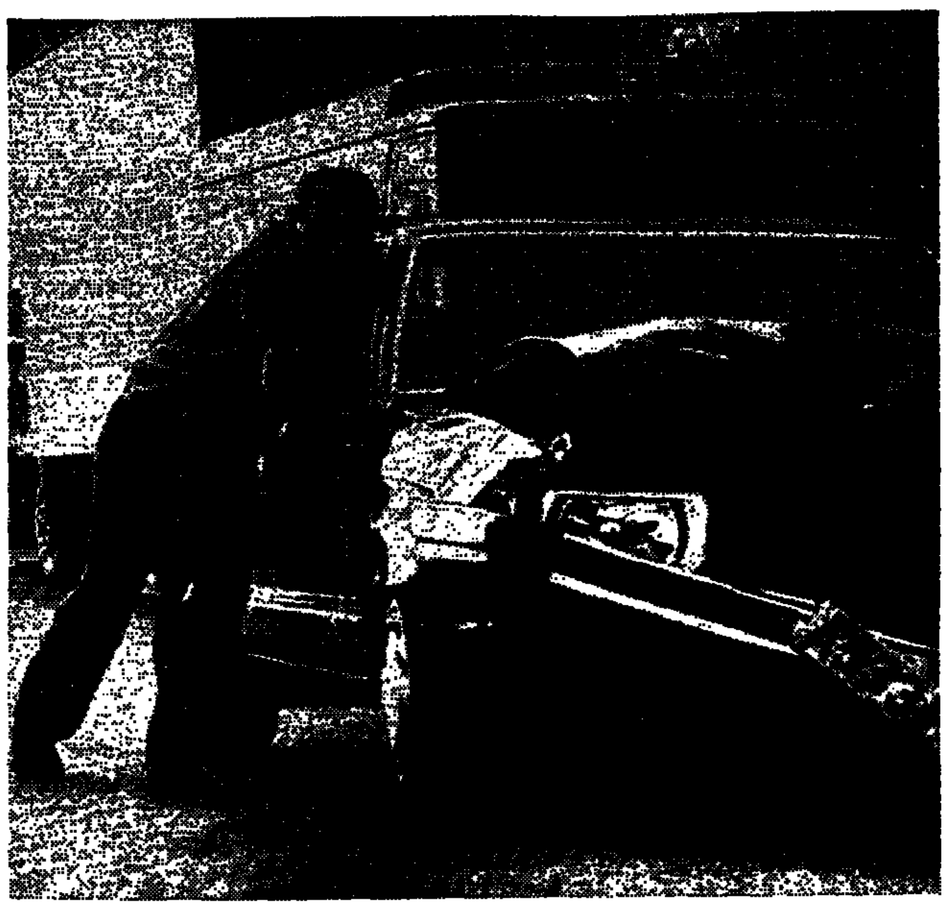

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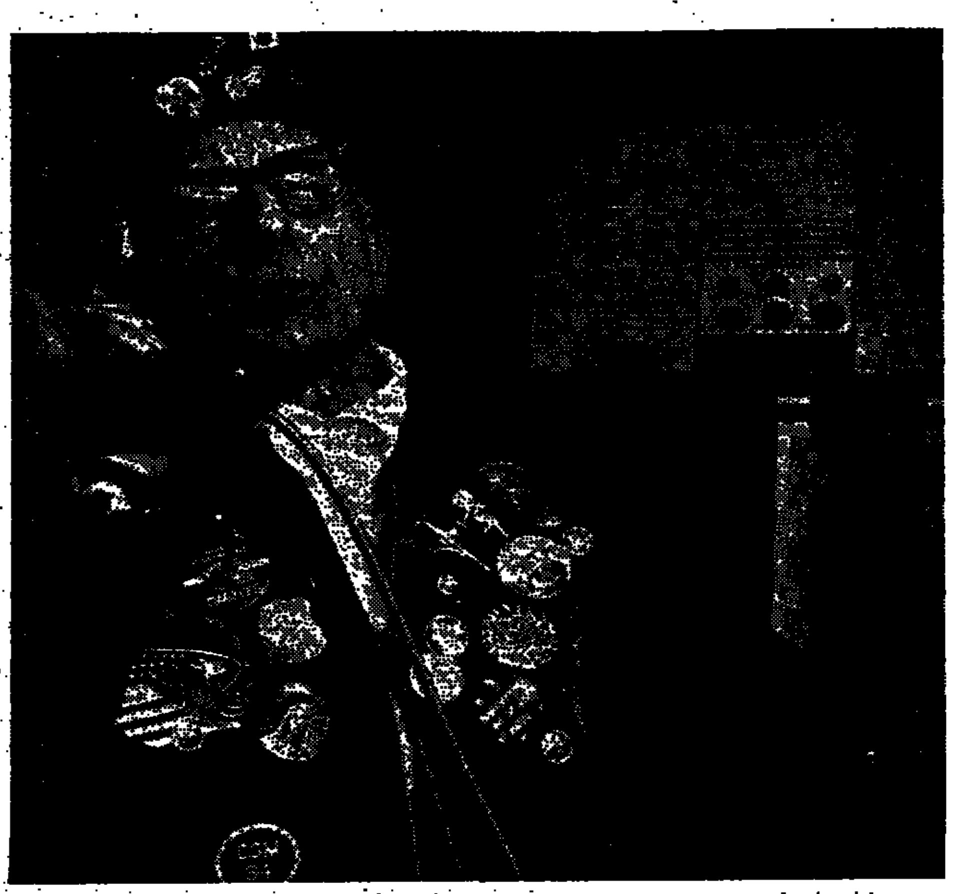

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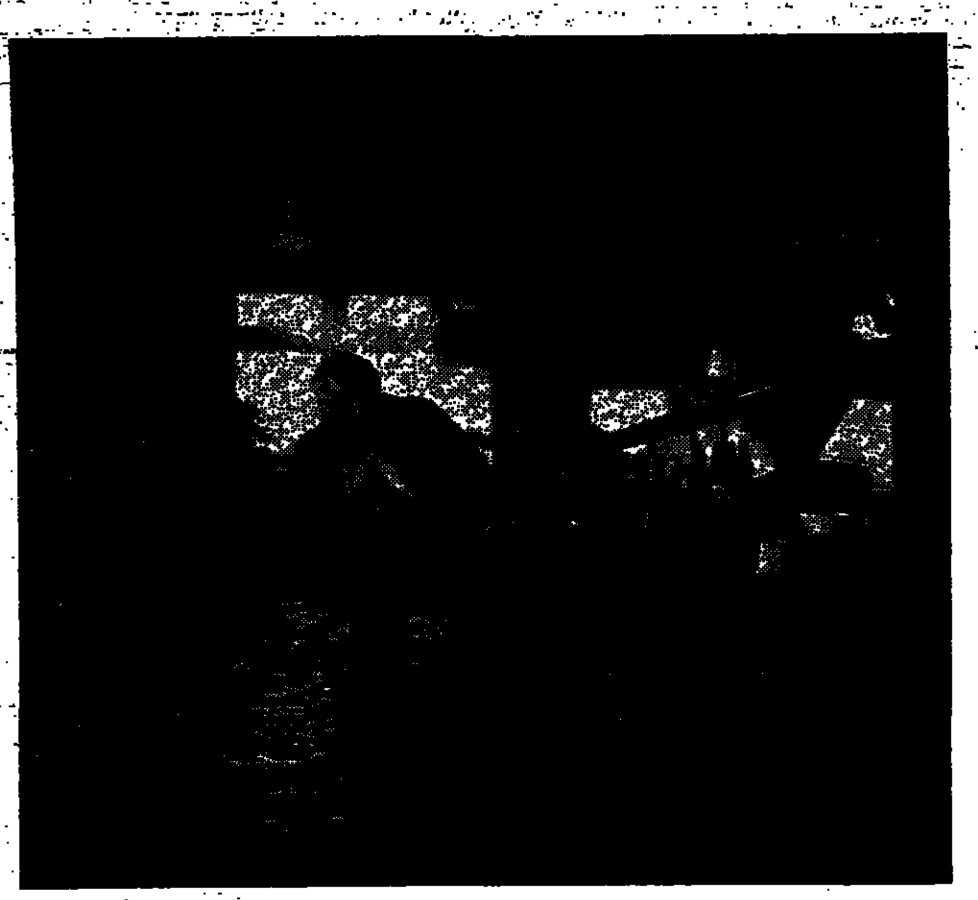

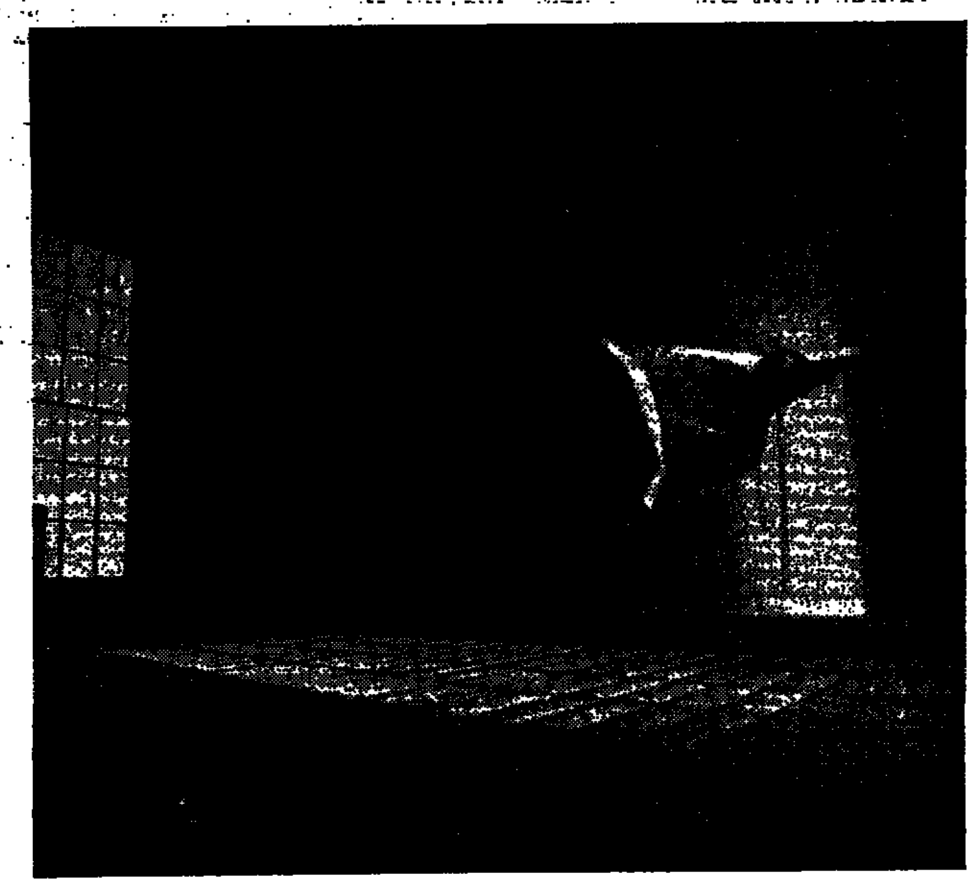

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One step ahead, then another

Mengistu admits 18 officers died in coup attempt

By Julian Ozanne in Addis Ababa

PRESIDENT MENGISTU Haile Mariam of Ethiopa said yesterday that 18 senior military officers were killed in last month's foiled coup attempt which had taken the Government completely by surprise.

Speaking to Western reporters in Addis Ababa for the first time since the aborted coup, President Mengistu said a further 176 senior officials and military men, including 24 generals, were being held by security police.

"The whole affair was conspiratorial. It was only a handful of leading generals who started the whole thing," he said. "They had no following from the army and from the people nor had they any social base at all."

"It could not have been predicted that they would deny or sell out the supreme trust reposed in them," he added.

Dressed in an immaculately tailored electric blue suit in the style of Mao Zedong, President Mengistu appeared confident and relaxed as he addressed reporters in Amharic for three hours, occasionally correcting his interpreter.

He denied that a new peace initiative launched earlier this week aimed at solving the 28-year-old civil war with secessionist Eritrean rebels was a public relations gesture.

"I don't for a moment think this is an exercise in window dressing . . . We have not baked a cake to distribute to many groups but what we have to do is to sit down together and bake a cake together."

Monday's peace agreement called, for the first time, for no preconditions to be set down before talks with rebels.

But despite this President Mengistu reiterated yesterday that any solution must be found within the present territorial unity of Ethiopia – a condition which has been the prime stumbling block to peace talks.

Mengistu: confident

"All of us in Ethiopia ranging from myself down to anybody and the entire leadership is not mandated to negotiate with anybody the secession of any one component of Ethiopia, nor its independence. This is not negotiable at all," President Mengistu said.

He also denied that the peace offer was the result of pressure exerted by the Soviet Union, which has shored up the regime's conflicts in the last 12 years with an estimated US$6bn of military assistance.

"The Soviet leadership and people have been with us in all the struggles we have waged . . . there wasn't a single incident in which we did not consult our friends. But that is not pressure," he said.

President Mengistu said it was unfortunate that Ethiopian relations with the US had "strained or soured" under the Reagan Administration and looked forward to the "favourable situation" which the new Administration had brought about.

The changing international climate of rapprochement and detente between East and West was more than encouraging, he said, both for world peace and for a resolution of Ethiopia's internal and regional conflicts.

Holy war within Afghanistan's battlefields

Christina Lamb looks at the competitive business of exporting Islamic ideology

THE PAKISTANI doctor allows himself a small grin as he waves goodbye to the party of Arabs in billowing white robes boarding the plane at Quetta Airport, Islamabad. It had been a successful day – after hunting sandbirdsin the Baluchistan desert and a quick tour of a nearby Saudi-funded hospital, the visitors signed cheques for the Afghan resistance.

One businessman from Kuwait agreed to earmark all profits from three of his industries for the cause – about $300m a year. The doctor is a representative for Saudi Red Crescent, the Arab World equivalent of the Red Cross. He and his brothers have set up hospitals and an orphanage for victims of the war in Afghanistan.

A member of the Hezbi Islami at a mujahideen training camp near Kandahar. The various religious sects and Islamic organisations see their involvement in Afghanistan not just as a fight against communism, but also as an opportunity to get their beliefs recognised and as a base from which to export their ideology to the entire subcontinent.

Of all 96 relief organisations operating out of Pakistan, the Red Crescent is the most omnipresent, its sign visible at every refugee camp. Most western correspondents covering the war have feasted on Saudi dates on the frontline and every year after the *Haj* pilgrimage, a convoy of 737s arrives laden with carcasses for the refugees.

But there is another, more insidious side to the operation. The businessmen are Wahabis, believers of a fanatically puritanical form of Sunni Islam, *demanding a return to the earliest days of Islam.* They see their involvement in Afghanistan not just as a fight against communism, but also as an opportunity to get Wahabism recognised as a legitimate sect, and as a base from which to export their ideology to the entire subcontinent.

Though closely allied with the Saudi Government, Wahabis do not represent the country's official policy which is to support all the resistance groups through Pakistan's military intelligence (ISI), matching American aid dollar for dollar, about $2bn so far.

Prince Turki Bin Faisal of the Saudi royal family pays frequent visits to Pakistan, usually liaising with former ISI chief General Hamid Gul. Intelligence sources claim that Saudi pressure has been a major factor in favouring the more radical groups. It was through Prince Turki that Gen Gul persuaded the Saudi Government to be the first to recognise the mujahideen government, set up in February to oppose the Soviet-backed Kabul regime of President Najibullah.

The Wahabis are less subtle, trying to directly infiltrate the resistance, using cash in an effort to ensure that "the mujahideen have the right ideology." Their often clumsy efforts are laughed at by the mujahideen. Commander *Mohammed Inkandahar says:* "We take their bags of money then shoo them away. If the Soviets could not impress us by force, the Wahabis won't do it with money."

The Wahabis aim to purge Afghanistan of its centuries old traditions of sufism, saint and shrine worship. Mullah Mohammed, a commander from the fundamentalist party of Maulvi Yunus Khalis, describes Wahabis as "militant Moonies."

"Originally we accepted their money because we needed it. But we don't need anyone to tell us how to be good Muslims."

In Peshawar, headquarters of the resistance, a group of young Arabs wearing Palestinian-style headscarves are in intense discussion.

They are part of around 700 Arab volunteers involved in the *jihad* (holy war). Calling themselves *salafis* or "followers of the great ancestors," they are backed by businessmen or religious foundations. Most of them are students from Saudi Arabia, Algeria, Palestine, Sudan, Kuwait, Egypt, Libya, Yemen and Morocco.

The volunteers join the most Saudi-dominated group such as Ittehad-Islami of Abdul Sayyaf, a former Kabul University professor, who studied in Cairo's Al-Asghar University, the centre of Islamic revolution in the 1960s and 1970s.

Anxious for involvement in Afghanistan, Sheikh Bin Bas, a Medina-based leader of the Wahabis, picked up Sayyaf in 1981 and gave him an initial $25m to start his own party. Sayyaf's party has so much money that their bases have generators to keep fighters warm. Wahabi patronage of Sayyaf along with Saudi pressure on ISI have proved so effective that in the shura, convened in February to choose an interim government, he was elected prime minister.

Shura participants claim they were offered large sums by Saudi representatives to vote for Sayyaf. According to Pakistani Foreign Office sources and diplomats, the Saudis blocked the involvement of the Shia-dominated Iran-based mujahideen because they would not vote for a Sunni extremist such as Sayyaf.

While Saudi government money is channelled only to the seven parties of the Peshawar-based resistance alliance, Wahabis also fund the more radical Ahle Hadith, a party founded in 1984 by Jamil Ur Rehman, a religious scholar who claims to have 9,000 men.

Rehman attracts the more extreme Arab volunteers and, banned from the alliance, he has set up his own rival government in the liberated province of Kunar. He reckons to do the same in Jalalabad *where he says he has 3,000 men* involved in the present battle. According to Rehman: "It is essential that the mujahideen have the correct ideology."

Although Arab volunteers have been coming since 1985, concern over their role only emerged publicly with the recent attack on Jalalabad. The Arabs are concentrated in Behsud where fighting is heaviest, and there have been numerous reports of Wahabis brutally slaughtering Afghan soldiers who surrender, raping village women and threatening western journalists as well as preventing aid workers from entering the area.

Mujahideen based around the south western city of Kandahar are furious at the build up of Wahabi forces in the nearby town of Spinboldak where they say a recreation and training centre has been built for Arab volunteers and reports of their activities are damaging negotiations for defectors.

Last month, 10 Arabs were killed by Kandahar mujahideen and 30 arrested after criticising the guerrillas for venerating graves of moderate fighters, and breaking a flagpole used to mark graves of what are seen as martyrs.

The Boldak-based Arabs seized a commander in revenge and the situation is so tense that Saudi's Red Cresecent has warned Arabs not to go near Kandahar, while in refugee camps in Baluchistan, Afghans are told they will become heroes of the revolution if they kill an Arab. Pakistan's Foreign Office is so worried that it is trying to stem the influx of volunteers, but admit it is difficult given their liberal visa policy to fellow Moslems.

The Wahabis main competitors in infiltrating the resistance are the Ikhwanis or Muslim Brotherhood, a militant organisation originating in Egypt. It has close relations with fundamentalist parties in the Moslem world including Jamaat Islami in Pakistan, and Hezbi Islami and Jamiat in Afghanistan. They too put in large amounts of money but their involvement is more political than military, seeking influence through schools and hospitals, though according to mujahideen and diplomatic sources they have set up a camp training terrorists to be sent to Europe.

At present, all the Arab organisations have a common interest in preventing the involvement of Shia-dominated Iran. They fear that with Iran perceived as having essentially failed in the west, it will turn its attention to the east and Afghanistan, a fear substantiated by large numbers of arms pouring into Shia regions of Afghanistan from Iran – some 62,000 guns last month alone.

Said a western diplomat in Islamabad: "With the Soviet withdrawal, the situation has got more complex. It is no longer just an east-west conflict. The struggle for who is to dominate Islam is now being played out on the battlefields of Afghanistan."

Namibia encourages return of exiles

By Jim Jones in Johannesburg

THE South African Government has opened the way for more than 41,000 Namibian refugees and exiles to return home by repealing many of the territory's security and apartheid laws and declaring a general amnesty for returning exiles.

About 25 political prisoners will also be freed under terms of the amnesty. The first exiles are expected to leave their camps in Angola and Zambia next Monday and be flown to Windhoek and other northern-Namibian towns in UN chartered aircraft.

In Windhoek yesterday Mr Martti Ahtisaari, the UN's special representative in Namibia, said the exiles would all return over the next six weeks in time to participate in the November 6 elections for a constituent assembly. He added Professor Carl Norgaard, an independent Danish jurist, had been appointed by the UN to arbitrate any disputes about which prisoners jailed by the South Africans should be considered criminal or political.

The laws repealed yesterday are some of those identified by the UN as impeding free and fair elections in terms of the UN's resolution 435. They include some introduced more than half a century ago based on racial classifications as well as those permitting detentions without charge or trial and censorship. Other laws identified by the UN are due to be repealed within a few weeks.

There is also a provision allowing parties participating in the November election to call on Mr Louis Pienaar, the South African administrator general, to repeal other laws which interfere with the free electoral process.

Before the exiles'return the staunchly-Swapo northern part of the territory has been in turmoil. Almost 200,000 Owambo school pupils have boycotted classes for the past three weeks calling for the withdrawal of military units.

Violence in Punjab leaves five dead

FIVE PEOPLE were killed yesterday in fresh guerrilla violence in India's Punjab state, where Sikhs have been battling for an independent state of Khalistan for the past seven years, Reuters reports.

Guerrillas hijacked a bus in Punjab, shooting two passengers dead and seriously injuring two others, while three people were killed when guerrillas shot at a public transport van, according to local reports.

The latest bloodshed brought this week's death toll to 10. Five people died in violent incidents on Monday in Punjab, which is plagued by Sikh unrest.

Yesterday prayer services were held in the Golden Temple in Amritsar marking the fifth anniversary of the storming of the holiest Sikh shrine by Indian troops to flush out extremists.

Despite the fresh violence Prime Minister Rajiv Gandhi told migrants from Punjab that calm would return to the area.

He said the Government had broken the back of the separatist movement and that he would like to see a time when people from other parts of India could safely settle in Punjab.

The week's violence also claimed the life of Sukwinder Singh, a self-styled general of the Khalistan Commando Force, who was killed by police on Monday in what was described as a "breakthrough". He was wanted for hanging four Hindus after the January executions of two Sikhs convicted of assassinating former Prime Minister Indira Gandhi in 1984.

A total of 834 people have died in terrorist violence in Punjab this year, and more than 2,500 were killed in 1988.

• India test-fired an home-produced surface-to-air missile on Monday which is expected to be inducted for military use from next year, agencies report.

The missile, with a range of 25km, was reportedly fired from the Chandipur range, 1,200km (745 miles), south-east of New Delhi.

It was the ninth test firing of the Trishul missile, whose name means trident in the Hindi language, since work on the project began in 1983.

Monday's firing comes two weeks after India successfully test-fired its first medium-range ballistic missile from the same launch site.

Sri Lanka takes a gamble with troops ultimatum

Mervyn de Silva in Colombo on why the decision to order the Indian forces to leave may backfire

PRESIDENT Premadasa's announcement last week that the 45,000 strong Indian peace-keeping force (IPKF) must leave Sri Lanka before July 31 took the entire diplomatic community in Colombo by surprise and annoyed the Indians, who feel that they should have been consulted on a bilateral issue.

In itself, an Indian troop pull-out is not necessarily a matter for controversy since Mr Rajiv Gandhi, the Indian Prime Minister, told a top-level Indian army conference in Delhi a month ago that he was planning to withdraw "the bulk" of the IPKF.

Most observers here felt that it would be done well ahead of the forthcoming Indian election campaign. Mr Premadasa appears to be pre-empting the extremist Sinhala-Buddhist JVP which has been insisting that the Indians must leave.

He made the announcement at a temple ceremony at the start of June, the month of Poson, the festival celebrating the introduction of Buddhism to Sri Lanka by a Buddhist pilgrim-monk, Mahinda, from India.

The JVP had already launched its "boycott India" campaign which was to reach its climax on June 14, the JVP's 25th anniversary.

Although the JVP has only asked all patriotic Sri Lankans to boycott Indian shops, banks and business establishments and not to use Indian goods, the campaign has taken a violent turn and several Indian buses and lorries have been set on fire in the deep south, the JVP stronghold.

Indian goods have been pulled out of shops and special police protection has been given to prominent Sri Lankan citizens of Indian origin. On a request from the Indian High Commission, banks, hotels and buildings identified as Indian-owned or managed are guarded by armed police.

Mr Premadasa has given another reason for his decision: Colombo will host the South Asian Group conference later this year. To do so, while foreign troops are present in Sri Lanka, "will be a slur on our self-respect," he said.

Although there are many qualifying ifs and buts in his statement, India was bound to read it as an ultimatum. It was certain to prompt a firm response from a country now enjoying the title of a regional superpower.

The President's advisers, however, wonder whether Delhi can afford to antagonise its small southern neighbour when it is already locked in a bitter dispute with Nepal in the north.

One theory is that Mr Premadasa has made a secret deal with the Tigers, the most powerful of the Tamil guerrilla groups, who have defied the Indian peace-keeping forces for nearly two years.

He may be ready to hand over the north-east provincial council, now controlled by the pro-Indian EPRLF Tamil group, to the Tigers, who are anxious to get the Indians off their backs.

Mr Premadasa wants the IPKF withdrawn so that he can start to tackle the fanatical JVP in the south without their being able to drum up popular support on the issue of the presence of a foreign power's armed forces on Sri Lankan soil.

The Tigers, housed in the Hilton Hotel in Colombo, have held month-long talks with the President and his senior ministers. The Indians who know the Tigers very well say they are taking Mr Premadasa for a ride.

If Mr Gandhi decided that the best way to treat a cocky Sri Lankan leader was to give him what he wants, and withdraw the Indian army, Mr Premadasa might get what his predecessor, President Junius Jaywardene, feared most – a two-front war that Sri Lanka's small army cannot fight.

In that event, the future of both the presidency and Sri Lanka will be even more bleak.

Police used tear gas to disperse hundreds of students, mostly Moslems, who had stoned the Maradana police station opposite Zahira college, the leading Moslem school in Colombo, for the second time in a week.

The Moslems are protesting against killings and arson in the ethnically mixed eastern province. They blame assorted Tamil armed groups and accuse the Indians of collusion or wilful negligence.

Both Moslem and Sinhalese communities in the province have demanded the redeployment of Sri Lankan troops. Since the July 1987 "peace accord", security in the north and east has been an exclusive IPKF responsibility.

An anxious Colombo is watching reactions in the neighbouring south Indian state of Tamil Nadu, the home of 50m Tamils. It is now governed by the DMK party, the authentic voice of Tamil nationalism, and the first party in independent India to raise a separatist banner.

INDIA AND SRI LANKA SIDESTEP IMMEDIATE CONFRONTATION

INDIA and Sri Lanka yesterday headed off an immediate confrontation over Sri Lanka's demands for the withdrawal of Indian forces from the country, David Housego writes from New Delhi.

Two days of talks between the two governments in Delhi ended with Sri Lanka setting a more flexible timetable than last week's demand by President R.Premadasa that the Indian Peace-keeping Force should leave the country by July 29. But Sri Lankan diplomats said that Mr Bernard Tilakaratne, the Sri Lankan Foreign Secretary had told Delhi that the Indian troops would have to be out by October when the summit meeting of South Asian nations is due to be held in Colombo.

The Sri Lankan argument is that growing hostility in the country to the presence of Indian troops would make it impossible to hold the meeting in Colombo if the Indians had not left by then. The extremist Sinhalese organisation, the JVP, has warned the Indian business community that they should be out by June 14.

Mr Tilakaratne, who arrived in Delhi with a message from President Premadasa, saw Prime Minister Rajiv Gandhi and other senior members of the government. After the talks, an Indian Foreign Office spokesman said that India virtually ruled out a withdrawal of its remaining 50,000 troops by the end of July but reiterated its desire to pull out its forces at "an early date".

Gaza residents must carry new ID cards to work in Israel

By Hugh Carnegy in Jerusalem

THE ISRAELI authorities yesterday began issuing new computerised identity cards to residents of the Gaza Strip in a marked extension of their control over the movement of Palestinians in and out of Israel.

The introduction of *the cards* is meant in part to prevent the 18-month uprising in the occupied territories spilling over Israel's pre-1967 borders and in part to punish those suspected of involvement in the *intifada* from reaping the benefits of employment in Israel.

A three-day-old curfew on the Gaza Strip's 650,000 inhabitants, the latest in a recent series of such curfews, was lifted in two Gaza villages yesterday so the first 1,000 new cards, which supersede previous less stringent identity systems, could be issued.

Eventually, all Gazan Palestinians over the age of 16 wishing to travel to Israel to work or to visit will be required to show the card. Those convicted of involvement in the uprising, or of offences such as non-payment of taxes, will be denied a card.

The authorities have said they want to extend the new system to the 1.7m inhabitants of West Bank, although they acknowledge the greater enforcement difficulties.

In Gaza, people passing through the Israeli army checkpoints into Israel will have to show their cards to be allowed to travel on. The cards *have a magnetic strip so soldiers* can check them through a computer if required and pick out suspects.

The cards bear the words "entry permit for Israel" and carry the holder's photograph. They are colour coded according to the area in Gaza the holder comes from.

The new system was announced last month after a surge in violence in Gaza and a number of incidents within Israel itself, including the death of a soldier who the authorities suspect was murdered by Gazan Palestinians.

Palestinians have complained it is discriminatory and will restrict their ability to work in Israel, the main source of income for the impoverished Strip since the *intifada* paralysed local industry. Thousands of Gazans cross the border to jobs in the Israeli construction industry, agriculture and the municipalities.

But a counter argument says that those holding a valid card will be less subject to police harassment.

In Jerusalem yesterday, police and mourners clashed at the end of an otherwise peaceful funeral for Omar al-Qassem, a prominent Palestinian *figure who died of kidney failure* on Sunday after 21 years in an Israeli jail.

Mr Al-Qassem, 42, who belonged to the Democratic Front for the Liberation of Palestine, was sometimes dubbed the "Mandela of Palestine". He was captured in the West Bank in 1968 while leading a band of armed infiltrators from Jordan.

Speakers at the funeral on the Temple Mount in the Old City of Jerusalem contrasted the refusal of the Israeli authorities to release al-Qassem with the reduction by President Chaim Herzog yesterday of the sentences of three Jews jailed for killing four Arabs at an Islamic college in Hebron in 1985.

President Herzog reduced the sentences of the three Jews to 10 years after they had expressed their honest regret for their crimes, a spokesman said. It was the third time their life sentences had been reduced since they were convicted four years ago.

Pre-poll India talks left but moves right

Gandhi's government prepares for a more liberal economy, writes David Housego

WHILE there is a distinct leftward tilt in the rhetoric of pre-election India these days, it is becoming clear that if Prime Minister Rajiv Gandhi's Government is returned to power economic liberalisation will be given a firm push.

This emerged at a three-day briefing in New Delhi for economic editors by ministers and senior officials where the emphasis was far from the populist welfare programmes that have been dominating the headlines.

There was talk of cutting central government subsidies, easing the 40 per cent ceiling on foreigners' equity holdings in Indian companies, allowing Indian companies to raise equity capital abroad, revising the monopoly regulations that restrict the growth of the larger Indian groups, and raising funds through the partial privatisation of the more viable public sector companies.

The pace of such change will clearly depend on the size of Mr Gandhi's majority – if he wins – and the power of the contesting lobbies in the aftermath of the election. But the Planning Commission, which is in the final stages of drafting the outlines of the Eighth Five Year Plan (1990-1995) is counting on a big boost to resources from selling up to 25 per cent of public sector companies. On the possibly optimistic calculation of one official this could raise up to Rs120bn (£5bn).

Mr S.B. Chavan, the Finance Minister, himself spoke of the need to cut subsidies which *currently account for 3.5 per* cent of gross domestic product. This would be a part of a strategy – one long urged by the International Monetary Fund and the World Bank – to cut the budget deficit to 5-6 per cent of GDP. In recent years the deficit has been as high as 8-9 per cent, with a consequent explosion in the size of the domestic debt and interest repayments, though it has come down to 6.8-6.9 per cent this year, largely because of the record 9 per cent growth of real GDP.

With the election due this year, officials are vague about possible changes in the FERA regulations (which govern the level of equity holdings by foreign investors and over which the US is now threatening trade retaliation) and in the Monopolies Act. But these are undoubtedly up for revision and, in the case of domestic companies, the changes are seen as essential in accelerating the vast investments needed in the petrochemical sector.

There are exceptions to this liberalisation trend. With Mr Sam Pitroda, the controversial US-trained telecommunications engineer recently been given full powers in this sector, the manufacture of electronic *switching equipment* will become an Indian monopoly.

Pressure will grow for liberalisation because on its own the Government does not have the means to diminish the bottlenecks that threaten growth

Mr Pitroda intends to develop his own C-DOT switching technology, thus barring the door to companies such as Alcatel which had hoped for a larger share of the lucrative Indian market.

Equally the Indian oil ministry is fighting a rearguard action to keep foreign oil exploration to offshore areas and refining to the public sector. But almost certainly the public sector does not have the funds or the manpower resources on its own to manage the vast development programme needed to reduce oil imports.

What emerges from a full survey of the economy is that pressures for liberalisation will grow because the Government *on its* own does not have the means to diminish the bottlenecks that could strangle higher growth.

The classic case of this is the road-building programme. On present plans government funding is about a tenth of what is required to give the country a proper highway network. The result is that India's dismal road system will almost certainly get worse over the next five years.

In the oil sector crude production will grow by 36 per cent over the next five years to 47m-50m tonnes a year. But because consumption is rising by 7-8 per cent a year, imports of crude and products will grow by 47 per cent to more than 31m tonnes.

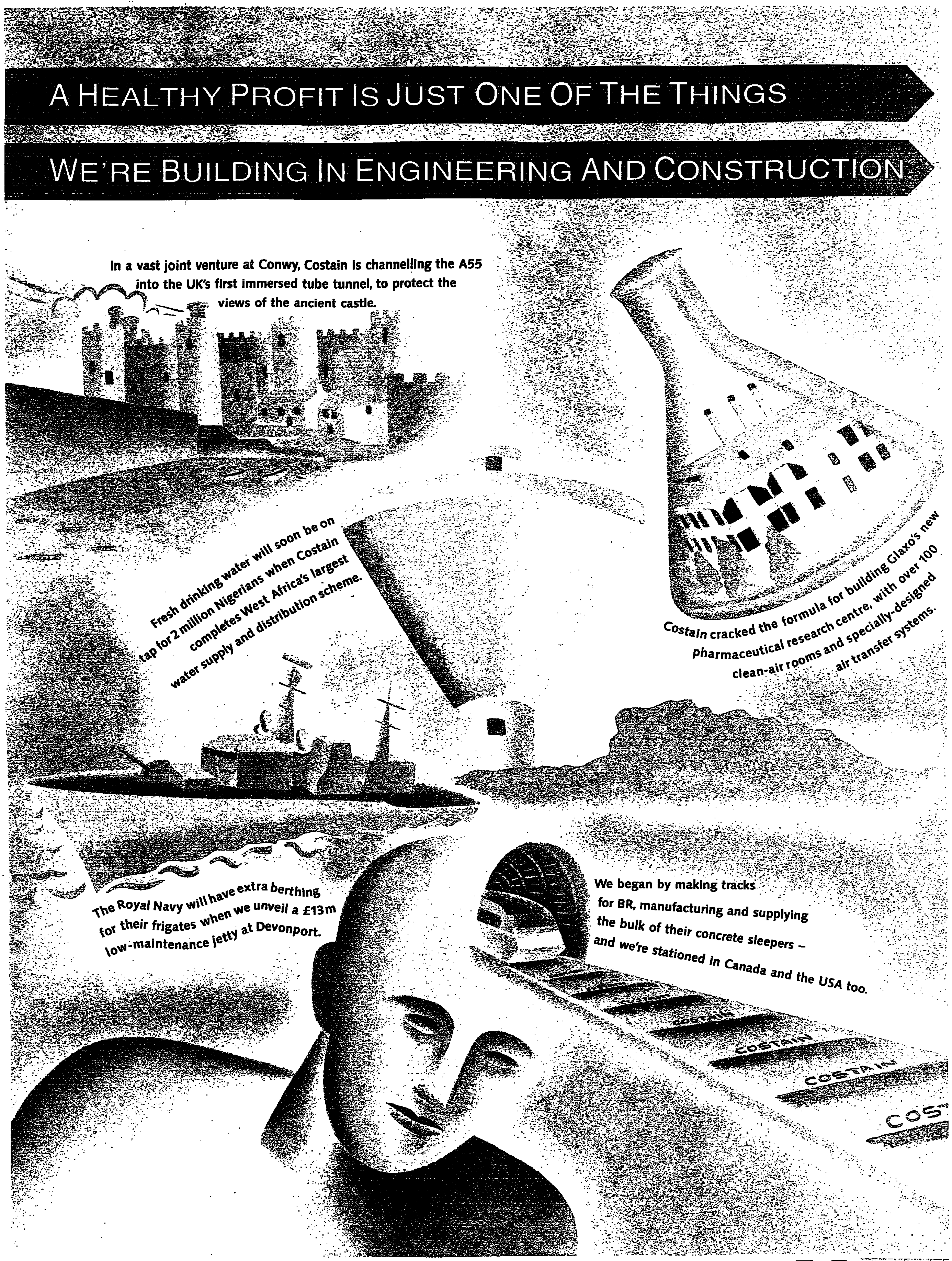
Time and again officials referred to "the very large degree of inefficiency in the system". Of $30bn of committed World Bank assistance, only $18bn have been utilised.

The dilemma the Government faces is that unless it can reduce the infrastructure bottlenecks in the economy, there will be a slowdown in growth and an increase in inflationary pressures. But higher levels of expenditure and increased capital imports risk putting further strains on the balance of payments.

Officials describe the existing level of current account deficit of more than 2 per cent of GDP as unsustainable. India has accumulated foreign debts of about $60bn with a debt service ratio of about 24 per cent. Exports rose in dollar terms last year by 15 per cent and have been increasing even faster in the first months of the current financial year.

But it is uncertain whether this trend can continue in the face of the high level of domestic demand and rising private sector investment. The trade deficit worsened last year to Rs740bn. If that situation continued, there would be powerful lobbies pressing for a tightening of import controls.

The technocrats would almost certainly favour obtaining cheaper borrowing through the IMF. Policies are already being put in place that tie in with IMF requirements. But before the election a further IMF loan remains a taboo subject.


A HEALTHY PROFIT IS JUST ONE OF THE THINGS
WE'RE BUILDING IN ENGINEERING AND CONSTRUCTION
In a vast joint venture at Conwy, Costain is channelling the A55 into the UK's first immersed tube tunnel, to protect the views of the ancient castle.
Fresh drinking water will soon be on tap for 2 million Nigerians when Costain completes West Africa's largest water supply and distribution scheme.
Costain cracked the formula for building Glaxo's new pharmaceutical research centre, with over 100 clean-air rooms and specially-designed air transfer systems.
The Royal Navy will have extra berthing for their frigates when we unveil a £13m low-maintenance jetty at Devonport.
We began by making tracks for BR, manufacturing and supplying the bulk of their concrete sleepers – and we're stationed in Canada and the USA too.
COSTAIN
COSTAIN

WORLD TRADE NEWS

Seoul talks its way out of the Super 301 net

A HIGHLY professional campaign aimed at US congressmen, officials, media and academic circles appears to have been the key to South Korea's success in avoiding being listed under the "Super 301" provisions of the new US trade law.

Six separate groups of South Korean officials and parliamentarians paid visits to Washington and other cities armed with well-produced material citing the country's progress towards open markets and a more "responsive and responsible" trade relationship with the US.

Maggie Ford reports on South Korea's lobbying effort against US trade curbs

The lobbying effort involved the deputy Prime Minister, the Minister of Trade, the head of the country's trade promotion body and the Foreign Ministry, *along with national assembly* committees in a co-ordinated effort over four months.

Its success has gratified the government of President Roh Tae Woo, which continues to face strong criticism on the political front during the country's bumpy transition from authoritarianism to democracy.

Politics appears to have played quite a strong role in the lobbying, although Dr Han Seung Soo, the Trade Minister, stressed that he thought the decision not to list South Korea was taken mainly on economic grounds.

Teams of officials and politicians pointed out that US demands to open agricultural markets were particularly sensitive because of poverty in the farm sector. A violent demonstration earlier this year by farmers provoked a political crisis in Seoul, threatening progress towards democracy, introduced only 18 months ago.

The government has hastened for restructuring of the farm sector, and the lobbying teams appeared to have convinced Americans that a sharp shock such as a Super 301 listing could halt both political progress and trade liberalisation efforts already underway.

Demonstrations, especially over past US demands to open markets for beef and cigarettes have heightened anti-Americanism in a country where the US has a strong security interest, the South Koreans also pointed out.

Officials appear to have been able to stick to their position that an agricultural market package unveiled in April could be subject to only minor concessions and Dr Han said that the US had accepted the proposal only at the eleventh hour.

The South Koreans also agreed to lift restrictions on foreign investment in line with measures already announced to open the stock market in 1992.

The officials showed US negotiators apparently convincing evidence that the country was diversifying its trade pattern. The US trade deficit with South Korea fell from *$9.8bn in 1987 to $8.5bn last* year with a target of $6.5bn this year.

In the first quarter of this year the deficit fell to $1.2bn from $1.8bn last year and imports from the US are up by 25 per cent.

Roh Tae Woo: gratified at success of lobbying

India 'will not bow to US' over investment

By William Dullforce in Geneva

INDIA WILL continue to liberalise its investment policies in accordance with its national interest but will not negotiate changes under threats from the US, Mr Shankarrao Chavan, Finance Minister, said in Geneva yesterday.

India's foreign investment regime and its closed insurance market were among six "unfair trade practices" listed as priority targets by Mrs Carla Hills, the US Trade Representative, last month, when she took the first step in applying the controversial new US Trade Act.

Washington has called for bilateral talks with India, Japan and Brazil on these practices over the next 12 to 18 months under threat of retaliatory trade action.

Mr Chavan said there was no question of India's nationalised insurance business being opened to foreign companies or privatised.

The government had started to liberalise foreign investment three years ago but no outside power could dictate the degree or pace of change.

However, the minister, who was in Geneva for a seminar with European businessmen organised by the World Economic Forum, said India was aiming for a substantial increase in foreign equity investment and was applying greater flexibility to applications. Preferred sectors were petrochemicals, engineering, electronics and computer software.

New direct foreign investments approved had climbed from Rs1.1bn in 1987 to Rs2.4bn (£94m) last year. The level was still very low but the trend was in the right direction, Mr Chavan said. The foreign exchange situation was a factor in the government's attitude to foreign investment but it would not constrain profit repatriation.

Exports had risen by 57 per cent in dollar terms over the past three years. A fixed export obligation was required only for a joint venture, in which the foreign partner wanted to exceed the 40 per cent equity limit.

Indonesia all fired up for gas pact

Sales deal with Japan is world's largest, writes John Murray Brown

AFTER months of ritual courtship, Indonesia and Japan are negotiating a new sales agreement for liquefied natural gas which is likely to set the pace for Far East gas trading well into the next century.

At stake is the world's largest LNG trade – a $3bn-a-year long-term contract under which Japan takes annual shipments of around 16m tonnes to supply power utilities and household gas consumers.

Also under negotiation is a multi-million dollar plant expansion which Indonesia is keen to see in place by the mid-1990s to take advantage of the projected growth in Japanese gas demand.

Indonesia is already the world's leading gas exporter, controlling 40 per cent of global trade. The Japanese buyers – five power utilities, two city gas companies and the Nippon Steel Corporation – account for about 80 per cent of Indonesia's gas output. With the extra capacity provided by three new trains (liquefaction plants) Indonesia's sales are set to increase by almost 30 per cent, making gas the country's largest foreign exchange earner.

The broader question, as ever, concerns the timetable for developing the resources – whether to sell now in a depressed market or hold out for better prices.

The expansion plan requires agreement on new long-term contracts. It also entails considerable costs. The project would involve a $750m construction contract for three new LNG production trains, as well as substantial investment in field development, piping and exploration.

Both construction and interest costs are expected to be higher than on earlier projects. Financing will again be provided on non-recourse terms where the lenders receive no formal guarantees and are repaid out of project revenues.

At today's prices a greater proportion of gas receipts will have to be assigned to debt service, leaving less for the Government and the foreign production sharing contractors – Mobil, Total, Unocal and the Huffco Consortium.

At today's prices a greater proportion of gas receipts will have to be assigned to debt service, leaving less for government and the foreign production sharing contractors

Indonesia currently enjoys more than 50 per cent of the Japanese market. There was visible relief when the Canadian Dome LNG project was scuppered. But officials are now more concerned at developments in Australia where the construction of five new LNG trains are under construction, with the majority of the gas destined for Japan.

Many argue Indonesia has little choice but to press on with the project. The budget is also under increased strain and relies more than ever on gas receipts to make up for the fall in oil earnings.

The world energy picture of course has changed dramatically since Indonesia's first LNG sales contract in 1973 – a second generation of contracts was signed in 1981. Just two months after the Arab oil embargo Japan was desperately looking to diversify its energy supplies. Indonesia's as yet undeveloped gas deposits offered secure supply at stable prices. Gas also represented a clean energy source – an important domestic consideration as Japan relocated its smokestack industries overseas.

Some oil analysts contend that Indonesia is still in a seller's market. With crude oil in the $14-$18 a barrel range Indonesia and Malaysia are the only countries in a position to sell to Japan.

Japan's recent flirtation with alternative suppliers such as Abu Dhabi and Algeria, is dismissed as an idle threat. "It just makes no sense for Japan to buy more gas from the Middle East to replace Middle East oil," said one US oil executive.

Indonesia has ample reserves. According to the Oil and Gas Journal, Indonesia's proven reserves are estimated at 73trillion (million million) standard cubic feet. Its delivery record is exemplary. In more than 2,000 cargoes its two facilities – at Bontang in East Kalimantan and Arun in North Sumatra – have never missed a date.

In April Indonesia introduced a new method for calculating crude prices – which in effect will bring gas more in line with the spot oil market. At times under the old formula the difference amounted to as much as $3 a barrel – a situation which eventually forced Indonesia to make substantial rebates to its Japanese buyers in both 1986 and 1988.

In the current talks the Japanese are looking for flexibility in two key areas – pricing and the so-called Take-or-Pay terms which oblige the buyer to pay for the gas whether or not he takes delivery. The buyers want a new LNG pricing formula which would bring 1973 and 1981 contract prices in line – which would represent lost revenues of about $50m

Under present Take-or-Pay terms the buyers are allowed a 3 per cent cargo swing either side of the contract amount in any 12-month period which must be made up in future years. The buyers are now calling for 10 per cent. Although talks are still at an early stage any new deal with the Japanese will be closely watched by Indonesia's other LNG customers.

South Korea's Gas Corporation KGC currently takes 2m *tonnes under a similar* long-term contract signed in 1983. Shipments start next year to Taiwan's China Petroleum Corporation for 1.5m tonnes. Pertamina, the state oil company, is also looking at possible sales to Singapore, the Philippines and India.

Sony workstation plan

SONY of Japan announced plans yesterday to form a Milan-based subsidiary that will sell 32-bit workstations to the Italian market, **Alan Friedman reports from Milan.**

The move follows Sony's announcement in March of plans to open its first manufacturing plant in Italy, to produce up to 48m cassette tapes a year.

Sony said it would seek to build up an Italian market presence for its Sony News brand of UNIX-based workstations.

The workstations, which make use of the Motorola 68000 series of powerful microprocessors, have applications in office automation systems, image processing, design and software engineering. Among the companies already competing in this niche of the computer market are Hewlett-Packard, Digital Equipment and Sun Microsystems.

Sony said it could not disclose its sales targets for Italy. Mr Emilio Baruffi, chairman of Sony Italia, limited *himself* to saying that the new workstation importing company was part of Sony's strategy of expanding its overall presence on the Italian market.

Chemicals dumping probe

THREE leading US chemicals companies face possible anti-dumping duties on their EC exports as the result of a European Commission inquiry launched yesterday, **William Dawkins reports from Brussels.**

Brussels is to examine allegations that they are unfairly underpricing their European sales of N propyl alcohol, a solvent used in printing ink, paint, cosmetics, pesticides and insecticides. The EC uses roughly 100,000 tonnes of the solvent annually, worth $90m, according to estimates by Cefic, the European chemical industries federation which lodged the complaint.

The US companies involved, Union Carbide, Eastman Chemical International and Hoechst Celanese, sold 7,381m tonnes of the solvent to the EC in the first half of last year. They were investigated for alleged dumping in the early 1980s, but gave the Commission a price undertaking in 1984 instead of paying duties. This undertaking expired last October.

The Commission is reopening the inquiry, following Cefic's claims that US producers' European prices are 10 per cent below domestic charges.

Turkey opens way for $1bn defence deal

By Jim Bodgener in Ankara

THE Turkish Treasury's agreement on the terms of $30m worth of commercial funding has opened the way for a $1bn project for local manufacture of armoured combat vehicles in Turkey. Preliminary agreement on the scheme was reached last year with a venture of the US FMC Corporation and Turkish contractor Nurol.

Since then, at various stages the scheme has been reported to be in financing difficulties. It is a key component of the ambitious Turkish programme to found an indigenous defence manufacturing industry overseen by the Turkish government's Defence Industry Development Administration (DIDA).

The $30m covering the supply of US services and equipment had to be sought from commercial sources because the Export Import Bank of the US (Eximbank) does not support military deals, and the project falls without the purview of US foreign military sales (*FMS*) credits.

Export credits from the European countries of other sub-participants in the scheme, together with a substantial amount of offset investment, forms the remainder of the financing package.

The $30m has been preplaced by the venture's financial adviser, Chase Manhattan Investment Bank, but will probably be sold down thereafter.

Preliminary agreement was reached recently with the UK's Marconi Communications Systems for a project to manufacture battlefield wireless systems which could be worth up to $200m with follow-on orders.

The next agreement likely to be reached soon will be for mobile radar systems together with their control centres, valued at $300m-$400m.

The bidders for this contract are Aydin Corporation, General Electric Company, Westinghouse Electric, all of the US; Marconi and Plessey (both UK), Selenia (Italy), and Thomson-CSF (France).

AMERICAN NEWS

US expected to sell F-16 fighters to Pakistan

By Peter Riddell, US Editor in Washington

THE US is set to announce the sale of 60 F-16 fighters to Pakistan at a cost of $1.4bn (£930m) in a signal of support for Ms Benazir Bhutto, the Prime Minister, during her visit to Washington.

The Bush administration is giving Ms Bhutto a ceremonial welcome to show US support for her position following her election last November. She held talks yesterday with both President George Bush and Mr James Baker, the Secretary of State.

During an effusive exchange of compliments at the White House, Mr Bush yesterday highlighted the return to democracy in Pakistan which, he said, had "strengthened America's already firm resolve to work closely with Pakistan".

Pakistan already has 40 F-16s and wants an additional 60 to replace its ageing F-6 Chinese aircraft. Administration officials have already been consulting with members of Congress, which has to approve any deal.

Pakistan is now the third largest recipient of US bilateral aid and for the 1990 fiscal year starting this September the Administration has requested approval from Congress for $380m in economic assistance and about $340m in military help.

Apart from bilateral relations, the topics discussed included Afghanistan, weapons proliferation, and drugs production and trafficking.

The US is taking a low-key approach on the nuclear issue, not wanting to weaken Ms Bhutto's political position but wishing to restate the US's strong opposition to the development by Pakistan of its own nuclear weapons. Under the so-called Pressler amendment, US law requires annual certification by the President that Pakistan does not have a nuclear weapon as a condition for continued US military and economic assistance. This was last certified in November 1988.

Mr William Webster, Director of the Central Intelligence Agency, recently warned about an arms race on the subcontinent between Pakistan and India, which recently tested a medium-range ballistic missile capable of carrying nuclear weapons.

After their talks both leaders stressed the importance of nuclear non-proliferation. Mr Bush expressed strong US support for "Pakistan's efforts, and India's as well, to improve relations".

Mr Bush stressed the critical importance of avoiding a regional nuclear arms race in the subcontinent. He said : "She [Ms Bhutto] assured me that Pakistan's nuclear programme is committed to peaceful purposes."

In reply Ms Bhutto stressed Pakistan's determination "to strengthen the process of nuclear non-proliferation by seeking accords, both bilateral and international, within the regional context".

Towers of wood and water in eyries of Manhattan

Janet Bush on the rival families who bring an element of craftsmanship to New York's city skyline

Glass, steel and concrete are the stuff of modern architecture and there is plenty of it on display in the spectacular monuments to economic expansion built on Manhattan this century.

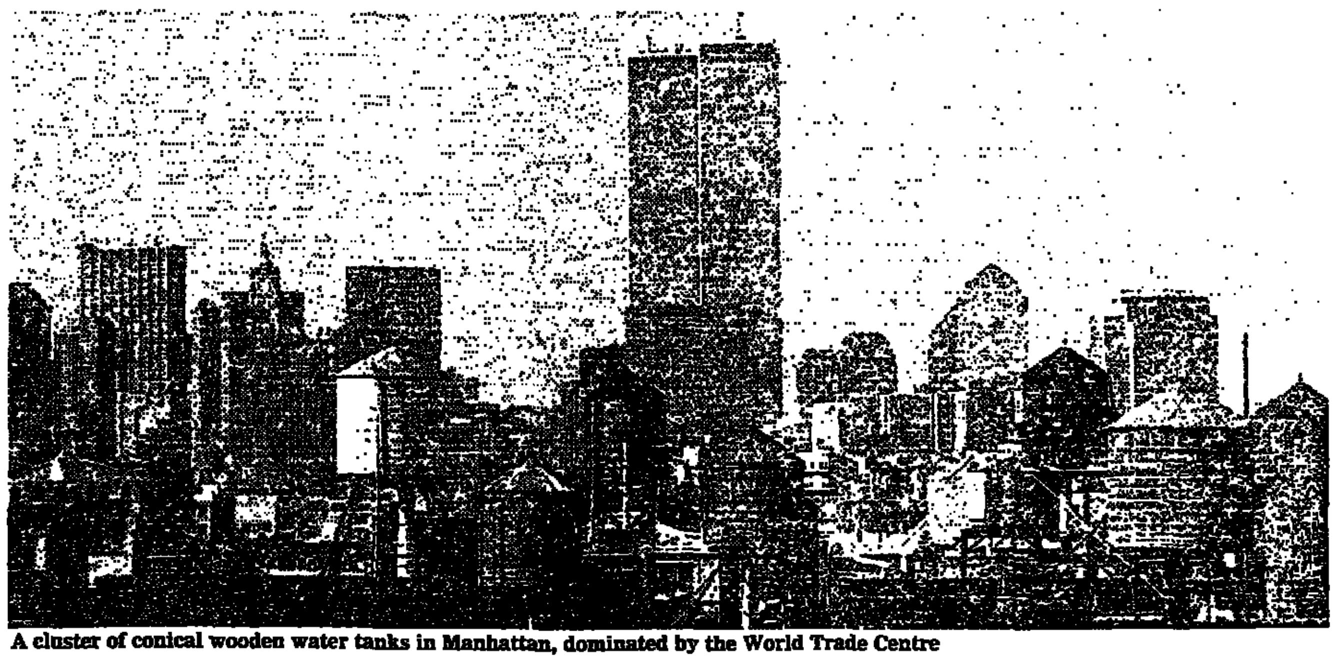
But between the sheer lines of the most famous skyline in the world protrude clusters of dirty, squat wooden towers topped with conical roofs, an anachronistic reminder of a more utilitarian stage in the city's history.

New York's wooden water tanks are as much a feature of the cityscape as the Empire State or the Chrysler building, and they pre-date these architectural triumphs by decades.

The shimmering towers of the new World Financial Centre at the southernmost tip of Manhattan conceal their wooden tanks under brassy domes and there are eight hidden under the Chippendale broken pediment of the award-winning skyscraper which is the headquarters of American Telephone & Telegraph.

While wooden tanks have gradually been replaced by steel ones in other cities, they have remained an integral part of New York. Despite the march of technology, more than 95 per cent of buildings above six storeys, which need tanks on their roofs to achieve adequate water pressure, still have them.

The art died elsewhere but New York still boasts two thriving family businesses which continue to build and repair wooden tanks. Isseks Brothers and Rosenwach Tank Co have been supplying New York's wooden tanks since the 1890s. Both families emigrated from Eastern Europe, bringing the art of making wooden wine barrels and bath tubs.



A cluster of conical wooden water tanks in Manhattan, dominated by the World Trade Centre

Abraham Isseks brought his family from Russia and founded the business on the Lower East Side in 1890. After he died in a machine shop accident, his widow Dora took over, even though she could neither read nor write and hardly spoke English.

Mr Scott Hockhhauser is one of Dora's two great-grandsons who now run the company from offices just a few blocks north of the original workshop on Pike Slip near the Manhattan Bridge. Recently, he says, he ran into an elderly Irish plumber who recalled how construction workers used to say: "Take care of the Widow Isseks."

The origins of the Rosenwach Tank Company, whose offices are in Long Island City and whose workshop is in the Italian section of Brooklyn called Canarsie, are a matter of some contention.

Mr Wallace Rosenwach, current chairman, maintains that his grandfather, an immigrant from near Warsaw, bought out another tank manufacturer called Dalton in 1894 for $55.

This is not the story, according to the Isseks. They claim that Wally's grandfather was a foreman at Isseks during the Widow's day, but that he fell out with her and set up on his own.

This draws a sharp retort from the other side: "My grandfather never worked for them, snorts Mr Rosenwach. "The thought of him working for anyone else!"

Whatever has been distorted or lost in the history of the two families, there is no doubt that there is razor-sharp competition between them and both try to outdo each other's claim to be the premier tank company in the city.

While the Isseks proudly call themselves the oldest tank manufacturer in New York, Mr Rosenwach trumpets the fact that his company is the only one that actually makes its tanks in the city - Isseks tanks are made in a workshop in Philadelphia.

The fact that there are only two companies - no other has ever broken their stranglehold on the business - has encouraged talk among New Yorkers of a feud to rival the hillbilly squabbles of the Hatfields and McCoys.

Each family laughs off the idea but concede that the competition is intense. "You get two guys selling pretzels across the street from each other and they keep cutting and cutting prices and soon both of you are out of work." says Mr Hockhhauser.

Wooden tanks are used for domestic water supply as well as reservoirs which comply with New York's stringent fire regulations. Because they last as long as 40 years, much of the day-to-day business nowadays involves repairs and cleaning but they are not dying out.

Both manufacturers list some formidable advantages for wood over steel which it is beginning to replace in some cases. Wood is an extremely good and cheap insulator suited to New York's cold winters and sweltering summers. And wooden tanks, made up of prefabricated strips held together with iron hoops, are easier to erect and keep clean.

A team of men from either company guarantees to dismantle an old tank and put up a new one within a day. "We had better do it in a day, what with these prima donna New Yorkers and their obsession with showers," said Mr Hockhhauser.

The wood strips can more easily be hauled up onto a roof than sheet steel and a wooden tank can be assembled with only six inches to work with around the tank. Wooden tanks cost a lot less to clean than steel because there is no rust and no need for expensive coatings.

It takes a particular form of lunacy to spend one's life working hundreds of feet above pavement level. Mr William Capp, foreman at Isseks, has been doing it for 26 years ever since he left the US army. In 1975, he was working in the bosun's chair, a seat strapped around the conical roof of the tank, when he plunged to the roof below and was laid up in hospital for 13 months.

"It is very, very dangerous. I enjoyed jumping out of planes better when I was in the service."

But there are compensations. Life on New York's roofs can be as lively as on the streets below. "You get a lovely view up there and there is always something going on.

Barbecues, parties, a few Venetian blinds left open - draw your own conclusions," Mr Capp laughs.

Foley vows to heal splits in House

By Peter Riddell

MR TOM FOLEY was yesterday duly elected Speaker of the House of Representatives, the second in line to the presidency, and promised to end recent bitter divisions.

Mr Foley, 60, from Washington State, has been House Majority leader and was the only Democratic nominee to succeed Mr Jim Wright, who resigned last week after an investigation by the House Ethics committee into his financial dealings.

According to tradition, the Republicans nominated Mr Bob Michel, their Minority leader, and the vote for the Speakership was on partisan lines, with Mr Foley winning by 251 votes to 164.

Mr Foley said he hoped quickly to "restore a mood of conciliation, reconciliation and co-operation between the two parties. I hope this can be the beginning of the movement of the House back to the business for which the public elected us to serve."

There is, however, still considerable anger about the spate of accusations which has led to the resignations of Mr Wright and Mr Tony Coelho, the Democratic Majority Whip.

Some Democrats have vowed to get revenge on Mr Newt Gingrich, the Republican Minority Whip and Mr Wright's main accuser, while the Republican National Committee has undermined any mood of reconciliation by circulating a document attacking Mr Foley as a political enemy more liberal than his reputation indicates.

The vacant positions of House Majority leader and Whip will be filled in elections by the Democratic caucus next week. At present, Representative Richard Gephardt, a defeated candidate for the Democratic presidential nomination last year, is favoured over Representative Ed Jenkins to succeed Mr Foley.

Guyana says it has agreed on debt relief

GUYANA has said the Paris Club agreed to relieve its debt at talks to reschedule $150m that the country owes the group, Reuter reports from Georgetown.

Paris Club countries agreed on Sunday to recommend that repayment of principal and interest on official medium- and long-term debt in arrears at the end of last year would be made over 20 years including 10 years' grace. The official Guyana Public Communications Agency (GPCA) confirmed this to the Caribbean News Agency (CANA), Reuter reported.

The GPCA was quoted as saying repayment of principal and interest on official short-term debt would be made over 10 years including five years' grace. No interest rates were given and no comparison was available to show repayment conditions before Guyana received the debt relief.

There was no provision for debt cancellation or interest rate reduction after the talks.

Bankers fear delay on Brazil payments

By John Barham in Sao Paulo

BANKERS fear that Brazil may suspend further payments on its $112.3bn foreign debt by September, unless the International Monetary Fund concedes its policy waivers and resumes lending.

Brazil has failed to keep IMF targets on inflation and government spending. An IMF team arrived in Brasilia on Monday to review policy targets.

Commercial banks as well as the IMF and World Bank have therefore suspended disbursement of $2.4bn in fresh loans they had promised Brazil under the last debt renegotiations.

However, Brazil must transfer a forecast $10.5bn in debt service payments this year as well as honouring a rising tide of capital outflows by multinational companies. Brazil's currency reserves in February stood at $6.3bn and the trade surplus is forecast at $16bn for the year.

Brazil suspended interest payments to commercial banks for almost a year in 1987.

A British banker commented that "it has long been my view that there will be a moratorium, but it is hard to say if it would be declared as a negotiating ploy or for political reasons". The threat of moratorium could be used to strengthen Brazil's hand in the critical negotiations with the IMF team. A declaration of moratorium could influence the November presidential elections.

However, Mr Jacques Kemp of the Dutch NMB Bank cautioned that "the possibility of moratorium exists, but all the factors could change". He doubted that Brazil would risk an outright moratorium and would choose instead to delay surplus payments if its foreign reserves came under pressure.

He said that if the IMF team gave a positive report the Fund's blocked loans would come through.

Inflation rate quickens in Chile

By Barbara Durr in Santiago

CHILE'S inflation rate in May rose to 2 per cent, exceeding estimates and confirming the need to slow down the economy. The selected index of the Santiago stock market consequently fell 4.48 per cent.

The Chilean National Institute of Statistics used a new, larger basket of goods to measure consumer prices last month. The new basket was devised in part because of criticism that the old one was not accurately reflecting inflation.

Bread and transportation, the two items that most affect Santiago's working population, rose 3 per cent and 6.1 per cent respectively.

Inflation during the first five months of this year ran at 6.3 per cent and during the last 12 months at 14.8 per cent. Its quickening pace follows efforts to cool the overheating economy with higher interest rates. The first quarter's economic growth reached 9.4 per cent.

Argentina to pay benefits to jobless

By Gary Mead in Buenos Aires

ARGENTINA'S government today introduces a national unemployment benefit scheme, in the context of the country's worst post-war recession and hyper-inflation.

The scheme will cover more than 640,000 people, the latest available official figure for national unemployment, representing fractionally more than 7 per cent of the workforce.

Each registered unemployed person will be entitled to receive the nationally-fixed monthly minimum wage of 8,700 australs (or $50 at current official exchange rates) for six months.

The monthly bill for the scheme is estimated at 1.9bn australs (or almost $11m) per month, to be funded by the already hard-pressed Treasury.

A further one-and-a-quarter million people are now estimated to be working reduced hours or are temporarily suspended due to the recession which is particularly affecting the construction and car-manufacturing industries.

Last week thousands of people from slum districts of Buenos Aires and the northern city of Rosario looted supermarkets, many protesting that they had neither work nor food for their families.

The Government's introduction of this second emergency unemployment scheme (the first was implemented in 1985 and lasted one year) will alleviate some of the immediate problems at the cost of squeezing depleted state revenues.

Among trade union leaders there are growing signs of a battle for leadership and control of the General Confederation of Labour (CGT), Argentina's centralised trade union organisation. President-elect Mr Carlos Menem, of the Perónist party, has yet to nominate his future Labour Minister although he has promised the post will go to a trade union representative.

One of his closest recent advisers, Mr Luis Barrionuevo (head of the Gastronomic Workers' Union), has suggested that Mr Saul Ubaldini, secretary general of the CGT, should make room for someone else at the CGT's helm. Mr Ubaldini did not favour Mr Menem's candidacy for the Perónist presidential nomination last year.

"Like footballers, boxers, and artists, trade union leaders have to know when to retire, in order to go with all honours and applause," said Mr Barrionuevo, who described Mr Ubaldini as having carried out a "titanic task".

Bankers face down Brady plan in Mexico debt talks

Stephen Fidler analyses the obstacles to agreement over re-financing

THE campaign against US proposals to reduce the debt and debt service burdens of Third World countries is now being acted out in negotiations between Mexico and its creditor banks.

Understanding why the banks are digging their heels in so deeply is explained simply in the words of one North American bank chairman, "Forget the principles, it's down to money". While obviously it is in banks' interests to extract the greatest concessions from all parties, there are broader issues. They are negotiating in a rearguard action with an eye on the precedents that are being set and on the implications, which still could be profound, on their balance sheets.

They also see some potential developments reducing their leverage over the debt issue, pushing more power into the hands of the International Monetary Fund, and by implication, the debtors.

Underlying this is a genuine concern that the proposals – launched on March 10 by the US Treasury Secretary Mr Nicholas Brady – could unwittingly bring about a collapse in cooperative debtor-creditor relations.

Uncovering what's at stake in Mexico's talks with its banks is not easy. The Mexican finance minister Mr Pedro Aspe is said to have threatened to demote any official leaking details of the talks to the level of clerk.

But despite the initial positions, which were unusually far apart, there appears some modest coming together. Mr John Reed, chairman of Citicorp, which heads the 16-bank advisory group, has said he believes agreement could be arrived at within a couple of weeks.

Understanding the issues is like peeling an onion: once one point is clarified another seems to emerge. Nevertheless, what follows is a guide to the some of those issues.

The Brady initiative

Since its launch, the Brady proposals have gained the support – in some cases grudging – of the main industrialised countries which finance the IMF and World Bank.

The plan would, for the first time, empower the two institutions to deploy resources to encourage the reduction of debt burdens and the lowering of interest payments by debtor countries agreeing to strong economic reform packages. The emphasis of the strategy had hitherto been on the the provision of new loans for debtors.

Since 1984, debtors have become keen to "capture" for themselves some of the discount to face value at which their loans were being traded among the banks. Brady's ideas were meant to encourage the voluntary debt reduction process, although new loans from banks would still be required.

The flesh on the bones of the vague Brady ideas was to emerge through negotiations between debtors and creditor banks. As expected, Mexico has become the test case.

There was cynicism that the US proposals were mainly aimed to help out Mexico, a prime foreign policy consideration for a Texas-dominated administration.

The idea was essentially to direct resources to provide pools of funds to enhance the creditworthiness of securities to be exchanged for banks' old loans, or funds which can be used to buy back old loans at a discount.

How much and how

Bankers have complained that the resources likely to be provided will not be important enough to secure significant debt or debt service reduction. But they also say the proposals will make banks even more unwilling to provide new loans, which will still be necessary.

In Madrid today, the heads of the IMF and World Bank are expected formally to outline how much is on offer to support debt and debt service reduction. However, many bankers have already done their own sums. From the IMF and World Bank, up to 25 per cent of extended credits or adjustment loans can be set aside for debt reduction operations, either through buybacks or collateralising principal. Up to 40 per cent of a debtor country's IMF quota and the equivalent amount from the World Bank can additionally be provided as interest support for debt reduction or debt service reduction operations.

This means in the case of Mexico, perhaps $1.2bn for interest support and nearly $2bn of support for principal payments or debt buyback finance. A further amount, as yet unspecified, is likely to be available from Japan for debt reduction operations, and Mexico may be able to supplement it further using its own reserves. Bottom line: $3bn to $5bn of support, of which most would have to support principal reduction techniques.

Banks want to know how flexible the IMF and World Bank intend to be with these pools, and they are getting mixed signals. Staff at the two institutions would like maximum flexibility in co-mingling the support pools – so that interest and principal support could be provided for the same bonds. However, the chairman of the IMF's interim committee, the Dutch finance minister Onno Ruding, is among those who don't like interest support, which he sees as implying a public bail-out of the banks, and want a rigid definition.

Many banks, particularly from the US, would like to see an emphasis on low-interest bonds, because it would mean they might not have to write down their loan principal. However, US legislators and others want to see write-downs from banks to emphasise that there is no bank bail-out.

What Mexico wants

Mexico's initial request was for an alleviation of its annual outflows of an annual $4.5bn over six years, a request described by the US Treasury as excessive. It wanted banks either to provide new loans equivalent to 80 per cent of interest payments, capitalisation of 80 per cent of interest, a reduction in debt principal to 45 per cent on $30bn of loans and the conversion of $10bn of loans into the same amount of 4 per cent bonds. It has since adjusted this position, indicating it would accept a 50 per cent reduction of debt principal.

The banks' reply

The banks have responded with detailed proposals but over three years. Banks have offered $1bn in debt service alleviation in a proposal which may subsequently have been adjusted.

One option would exchange existing debt, discounted by 22 per cent (compared with the originally offered 15 per cent), for bonds with an interest rate at 1¼ percentage points over money market rates. Another calls for the issue of bonds offered at face value at an interest rate of 8 per cent for five years, while a further possibility offers both principal and interest reduction. Bonds would mature in 30 years and will be fully collateralised with zero-coupon US Treasury bonds or guarantees from Mexico.

There are important differences over whether a big debt to equity swap programme should be part of the package.

Why so far apart?

Both sides say their claim for how much relief Mexico needs is backed up by their own economists. Indeed, part of the difference arises out of assumptions about the oil price, with banks believing Mexico's $12 a barrel assumption is too low. However, the big discrepancy is likely to be on their capital account assumptions. Mexico's reserves dropped by $6bn last year, the equivalent of its earnings from oil exports. This is, say the banks, being encouraged by an overvalued exchange rate, which is also turning Mexico's trade into deficit. Mexico says a firm exchange rate is necessary to combat inflation, but the banks by implication want to see a bigger devaluation to make exports competitive and encourage a reflow of capital flight.

Deadlines

There are a number of potential deadlines, the first of which falls on June 20, when Mexico is due to make a big interest payment of more than $1bn to banks. With reserves down to an estimated $4bn in April, bankers are worried that the payment may not be made. Progress is also needed ahead of the roll-off of the pact between the government and trades unions in Mexico. A success for the debt strategy by the July 14 summit would also be seen by some governments as highly desirable.

The sting in the tail

Bankers are very worried by the powers given to the IMF under new guidelines. The Fund may now disburse funds (as it has in the case of Mexico) to countries before a bank package has been put together. For the first time, it may also lend, if it ascertains that banks are unreasonably blocking agreement with a debtor, when the country is in arrears to commercial banks. This gives the Fund the power to prevent banks vetoing financial packages with countries willing to undertake economic reform programmes, as they did for example in the case of Costa Rica.

This is a weapon that the Fund will want to use sparingly, since any release of money to a country in arrears will be seen as condoning these arrears. The Fund and Bank will enter the firing line of the commercial banks, who could retaliate by pulling short-term trade and interbank lines, with the potential that the whole debt issue could dissolve into chaos.

THE drive to conclude a refinancing package for Mexico will resume in Madrid today at a multilateral meeting between bankers, Mexican officials, the IMF and the World Bank, David Lascelles reports.

The meeting was arranged to enable Mr Michel Camdessus, the managing director of the IMF, and Mr Barber Conable, the president of the World Bank, to brief bankers on the resources available from official sources.

But it will be attended by Mr Angel Gurria, Mexico's chief debt negotiator, and Mr Pedro Aspe, the Finance Minister. The presence in Madrid of the chairmen of most of Mexico's large creditor banks, on the occasion of the annual International Monetary Conference, has also increased its importance and created a strong air of expectation.

It was not clear last night whether the bank chairmen would attend today's meeting, or the executives who normally sit on the advisory committee.

UK NEWS

Abbey National gets go-ahead for share plan

By David Barchard and Clare Pearson

THE LAST obstacle to Abbey National Building Society's stockmarket flotation was yesterday removed as the Building Societies Commission gave permission for the float, the first ever by a building society, to proceed.

However, Abbey National, a specialist institution in mortgage finance and deposits owned by the members, came in for some sharply worded criticism of the board's conduct during the run up to the flotation.

In addition the society was ordered to review arrangements for compensating children with accounts with the society for their loss of ownership.

The commission says that Abbey National gave its members "a biased view of conversion" which fell far short of what they could reasonably have expected. Parts of Abbey National's transfer statement to members are described as "facile", "over–sanguine", and failing to bring out key aspects of the changes.

As a result of the commission's decision, about 250,000 accounts owned by children will have to be examined.

However Sir Campbell Adamson, chairman, said yesterday that the number of accounts likely to qualify for additional cash payouts would probably be very small and he did not expect that Abbey National would be obliged to pay out a large amount.

He said that the society was "elated" that it was now finally able to complete the flotation, which he said had proved far more difficult to push through than originally anticipated.

This weekend an intensive, £2m advertising campaign gets going, aimed at whipping up Abbey members' interest in applying for the extra shares to which, aside from the free shares, qualifying savers and borrowers are entitled.

The next key date in the countdown to July 12, when stock market dealings in the Abbey shares is set to start, is next Thursday. This will mark the posting of the prospectus for the extra share issue.

After that, applicants will have just 10 days to return their forms to the Abbey by post, or until June 28 if they are handing them in.

Sharp fall in number of new homes built

By Andrew Taylor, Construction Correspondent

THE NUMBER of new homes being built by housebuilders fell sharply in April according to figures published yesterday by the Environment Department.

Builders started work on 16,400 houses and flats in April compared with 21,000 in the corresponding month last year – a fall of 28 per cent.

Stock market concern about the outlook for house sales has been reflected by big falls recently in share prices.

Housebuilders since Easter have on average under-performed the FT-All share index by between 15 per cent to 20 per cent, according to the London stockbroking arm of Swiss Bank Corporation.

●The average price of a home in Britain would have fallen last month but for house price rises in Scotland and northern England, according to a survey published yesterday by Halifax, Britain's biggest building society.

It added that housebuilders in many parts of the country were holding down prices, in a bid to restrict falling house sales.

Jump in new car sales sets monthly record

By Kevin Done, Motor Industry Correspondent

NEW CAR sales in May jumped by 7.46 per cent to 199,258, setting a record for the month, according to figures released yesterday by the Society of Motor Manufacturers and Traders.

New car registrations in the first five months of the year were 9.15 per cent higher than a year ago at 1,021,736, the first time that a million cars have been sold in the UK before June.

UK new car registrations have reached a record level for four successive years, and new car sales are likely to reach a new peak in 1989 despite an expected downturn in the second half of the year, according to the society.

While many retail sectors are reporting a slackening of activity "the car sector continues to out-perform all forecasts, seemingly unaffected by the Government's high interest rate policy," says the society in its monthly statistical review.

UK new car sales totalled 2.216m last year and, according to the society, sales will exceed 2.4m this year if the present rate of growth continues.

"Even if monthly sales remain flat from now until the end of the year, 1989 will still be another record year."

The society says that it expected the big rise in interest rates, especially in mortgage rates, to have hit demand by now, but it suggests that the widespread availability of low interest finance as well as intense competitive marketing campaigns by leading manufacturers have played a significant role in sustaining private car purchases.

Imports captured 55.77 per cent of the UK new car market in May compared with 55.12 per cent a year ago and claimed 55.84 per cent in the first five months compared with 54.64 per cent in the corresponding period of 1988.

The biggest gains last month were made by Vauxhall, the UK subsidiary of General Motors of the US, which increased its share to 15.26 per cent from 12.23 per cent a year ago helped by a 34 per cent jump in sales volume.

Big gains have also been made this year by Nissan, Peugeot and the Volkswagen group which includes Audi and SEAT, while Rover, Fiat of Italy, and Volvo of Sweden have lost ground.

Hyundai executive launch

HYUNDAI, South Korea's largest vehicle maker, today launches the Sonata, its first executive car, in Britain, but admitted last night that sales predictions made earlier in the year would probably not be met, writes John Griffiths.

Mr Mike Adams, managing director of Hyundai Car Distributors (UK), the importer of Hyundai cars, said last night that UK new car sales to private, rather than company, buyers were now weakening substantially under the impact of high interest rates.

As a result of the weakening, sales targets set when the Sonata had its world unveiling at the UK motor show last year would not now be realised, said Mr Adams.

Hyundai Car Distributors (UK), subsidiary of the International Motors group which also imports Japanese Subaru and Isuzu vehicles to the UK, hopes to sell 1,500-2,000 of the intended Ford Granada, Rover 800 and Vauxhall Carlton Challenger in the remainder of this year.

This, said Mr Adams, should lift total Hyundai sales in the UK this year to about 13,000 units, compared with 11,365 last year. Last October, the British importer had forecast that Hyundai sales would total 12,500 in 1988, rising to 16,000 this year.

Jaguar plans US discount

JAGUAR, the UK luxury car maker, plans to offer limited financial incentives to customers in the US in an effort to boost flagging sales in the US market, writes Kevin Done.

The move is an abrupt change of marketing strategy for Jaguar in the US, where it has previously resisted pressures to offer incentives despite similar moves by most of its leading competitors including Mercedes-Benz and BMW of West Germany.

The US market accounts for more than 40 per cent of Jaguar sales, but in the first five months of this year sales dropped by 6.5 per cent to 7,477 following declines in both 1988 and 1987.

Jaguar's big European rivals in the world luxury car market have also been struggling to halt falling sales in the US. Mercedes-Benz, in particular, suffered an 18.9 per cent fall in US sales in the first five months.

Jaguar tried to avoid financial incentives and discounts in the US by switching sales to other markets. But the company forecast a 10 per cent increase in US sales this year and decided to offer financial incentives to clear 1989 stock and prepare for the launch of its 1990 model year programme in the autumn.

Scottish accountants reject merger plan

By James Buxton

THE PLAN to create a single Institute of Chartered Accountants of Great Britain was rejected yesterday by members of the Institute of Chartered Accountants of Scotland.

The result marks the demise of the first attempt in 20 years to harmonise the British accounting profession. It represents an acute embarrassment for the profession's leaders, who had responded to promptings from the Government when proposing the creation of the new body.

Mr Jock Worsley, president of the Institute of Chartered Accountants in England and Wales (ICAEW), the other institute involved in the merger plan, said: "This does no good for the credibility of the profession generally. I think the Scottish profession will live to regret the way members of the institute voted against the proposal today."

Members of the Scottish institute rejected merger with the Institute of Chartered Accountants of England and Wales by about 55 to 45 per cent, with 4,025 members voting against and 3,275 members in favour. A two-thirds majority had been required for the merger to be approved.

During a year of often bitter and emotional argument, leaders of the Scottish institute claimed that the merger was necessary because of legislation requiring accountancy firms to be regulated by one of the two institutes.

Many firms straddle the English-Scottish divide; thus, an English-based company which operates in Scotland would be regulated by England's institute. The Scottish institute feared that without merger it would gradually lose members and prestige.

Opponents contended, however, that merger was unnecessary and would erode the distinctiveness of the Scottish accountancy profession. Questions of regulation could be solved by closer co-operation between bodies north and south of the border, they said.

In Brief

IRA bomb hits £60m Belfast development

An IRA van bomb ripped through a partially built £60m shopping development in Belfast yesterday causing serious damage to shops and offices in the city centre. It was the third time in 14 months that terrorists had managed to plant a bomb at the CastleCourt complex which is Ulster's biggest-ever retail development.

Belfast shipyard protest

Around 1,000 workers at Harland & Wolff, the Belfast shipbuilder, staged a one-day walkout in protest against proposals for new working conditions as part of the management-employee buyout of the company.

Belfast-Dublin rail link

Plans for a new high-speed rail link between Belfast and Dublin by 1994 were disclosed yesterday. Northern Ireland Railways have formally adopted a £50m investment programme to be jointly implemented by NIR and Irish Rail.

TV channel restricted

The Government's planned new national TV channel, Channel 5, may only be able to reach around 50 per cent of the population, due to economic constraints, according to the chairman of the Independent Broadcasting Authority.

£250m 'squandered'

Merseyside Development Corporation, in north-west England, has squandered the prospect of more than 1,000 jobs and at least £250m of private sector investment and should be wound up, according to former board member and monetarist economist Professor Patrick Minford.

Passengers died 'in vain'

The 35 killed in the Clapham rail disaster, south of London, "suffered in vain", the crash inquiry heard on its 57th and final day and counsel for the bereaved and injured said the crash was "wholly unnecessary and wholly avoidable."

Euro-centre chosen

Exeter Enterprises, the consultancy arm of the University of Exeter, has been chosen as the site of the first European Information Centre for the far south-west of England.

Student plan rejected

Government plans to expand the number of university students through a sweeping reform of higher education finance are likely to fail, university vice-chancellors said yesterday.

Rush for FM franchise

No less than 32 groups have submitted formal applications for the new London FM franchise, the largest number ever to seek a commercial radio contract.

Traffic side-steps ports as fears of dock strike grow

By Our Industrial Staff

CONTAINER traffic at some of Britain's leading ports has dropped to a trickle this week as companies have acted to sidestep the threatened dock strike.

Measures to divert cargoes from ports operating under the dock labour scheme, which the Government wants to abolish, have already had a devastating effect on three of the country's highest-volume container ports, Southampton, Tilbury and Liverpool.

Shipments at the 40 ports in the dock labour scheme could be halted by strike action next week following court hearings taking place this week. Substantial volumes of imports and exports have been diverted to Continental destinations as well as to British ports outside the scheme.

Movement through Liverpool has dropped by 80 per cent, and Tilbury said yesterday it was was suffering from "substantial traffic losses." At Southampton, Mr Geoffrey Bayley, managing director of the Container Port, said: "We've got absolutely nothing in today. The only movement I can see are the seagulls perching on the cranes."

While many companies, confident that they can cope, have made no special preparations, others are adopting a variety of methods to circumvent a stoppage.

In London's Court of Appeal the Lord Justices announced their intention to give judgment today on the port employers' appeal against a High Court judge's refusal to grant an injunction stopping the national docks strike. The judgment may determine whether Britain will become embroiled in a national docks strike within the next few days.

Some cargoes are being diverted to Rotterdam and other Continental ports, broken up and shipped to non-scheme ports in the UK.

A number of companies have been paying premiums to shipowners to speed the movement of their cargoes through scheme ports before the threatened strike starts.

Keith Brown Shipping, a Cardiff shipbroker, says companies might pay between 5 and 10 per cent more to have their cargoes shifted now rather than wait for transport dates for which they had already been scheduled.

Felixtowe, a non-scheme port, with the leading position in Britain in container traffic, said it was experiencing some increase in volume.

Importers in several industries have built up stocks over the last few weeks to prepare for the possible shutdown in the scheme ports.

Industry officials say Britain now has a stock of five months in basic commodities such as edible oils, rice bran, soya meal, bone meal and various kinds of grain.

Mr George Alcock, chairman of both Merseyside Chamber of Commerce and the Grosvenor Grain and Feed Group, said yesterday: "People have been making contingency plans for a long time. There has been a lot of diversion of cargoes. A threat of strike is worse than a strike sometimes for the amount of switching of cargo involved."

The construction industry, one of the biggest importers in Britain, with a trade deficit of £2.6bn last year, has built up substantial stocks in several areas.

Stocks of soft wood are estimated to be standing at about three months by the Timber Trade Federation. Hardwoods stocks are estimated about five to six weeks.

Lords drop two Lonrho charges

By Richard Donkin

LONRHO, the international conglomerate headed by Mr Tiny Rowland, won a further victory yesterday in its defence against accusations that it has been guilty of contempt of the House of Lords.

After a submission by Lonrho, a reconstituted committee of law lords dropped two of three contempt charges against Lonrho and the Lonrho-owned Observer newspaper relating to the publication of a special edition by the Observer.

The edition contained extracts from a leaked copy of the report by government inspectors into the 1985 takeover of House of Fraser by the Al Fayed brothers.

The new three-man panel which replaces the original committee of five Law Lords who initiated the proceedings decided it would focus only on the question of whether the publication of the Observer special issue constituted contempt. Lord Bridge said the reasons would be given later.

The dropped charges covered the mailing of the edition to four of the five original Law Lords who were due to hear Lonrho's final attempt to force Lord Young, the Trade and Industry Secretary, to publish the report without further delay.

Japanese launch battle for Britain

By Andrew Hill

LOCK UP your children, throw away the television set and prepare for the arrival of the latest cult game.

Just when you thought it was safe to go back into the living room, Nintendo – a video game from Japan via, inevitably, the US – is set to hit our TV screens.

Serif Cowells, the UK group best known as Europe's manufacturer and distributor of the cult boardgame, Trivial Pursuit, has just won European distribution rights for Nintendo.

The cult status of TP, as Serif calls the general knowledge game, is on the wane in Europe. Although last year's sales of 3.2m units were the best since its European launch in 1985, it is becoming an "evergreen" – an old favourite to be brought out by the family at Christmas.

Nintendo, hopes Serif, will provide the USM-quoted group with a replacement source of revenue. But as a sociable, even educational, dinner party game – which Trivial Pursuit succeeded in becoming – Nintendo may leave a little to be desired.

Modelled on arcade video games, it is based on a control console, and a selection of game cartridges, mainly confrontations between the player and the computer graphics, be they boxers – in Mike Tyson's Punch-Out!! – or gunfighters, complete with full colour and sound. Predictably, the game – aimed at seven to 14-year-olds – has found its biggest market among boys.

Serif accompanied yesterday's statement with some bone-chilling facts from the US. Nintendo has already gained about 70 per cent of the total electronic games market, one in five US homes now has the system, and 35m control consoles and 70m game cartridges have been sold in the last three years worldwide.

Getting in on the cult will cost European parents more than their US and Japanese counterparts.

Nintendo has actually been on sale in the UK since 1987 – principally through Dixons and Boots: the standard control box, which plugs into any television screen, costs £99, including one game, and the more popular de luxe model comes at £149, with two games.

Serif, which persuaded Europeans bored with the original Trivial Pursuit to buy new editions at £25 each, hopes parents will part with £20 or £30 a time to add new games to the system and keep their offspring quiet.

The company quotes Helen Moody, a Californian mother: "It's got to the point where the kids won't come to play at your house unless you have Nintendo."

One good reason for not buying the game, some would say...

Mixed welcome for EC reprieve on lorries

THE DECISION on Monday by the European Community transport council to keep 40-tonne lorries off British roads until 1999 received a mixed reception yesterday from industry and environmentalists, writes Andrew Taylor.

Previously, the Commission had proposed to allow heavier lorries into Britain from 1997 and some companies were disappointed at the two-year delay. Environmentalists were dismayed that heavier lorries had been allowed at all.

Mr Paul Channon, the Transport Secretary, said the concession was a victory for commonsense: "We have argued all along that we must have time to strengthen our bridges so that they are strong enough to take the heavier weights."

The Transport Department said yesterday it would cost about £700m to strengthen 10,500 bridges currently capable of carrying lorries of 7½ tonnes.

The money would be found from the normal bridge maintenance budget and would not affect government plans to increase spending on new roads.

Mr Garry Turvey, director general of the Freight Transport Association, yesterday criticised the decision to postpone the introduction of 40-tonne lorries. He said the decision would cost British industry £2bn in unnecessary operating costs over the next 10 years and reduce the competitiveness of British companies in continental Europe.

The association said a Midlands exporter shipping 1,000 tonnes to Milan would be able to make three fewer lorry journeys and save about £5,000 in ferry fares and overnight accommodation by using 40-tonne vehicles.

It said the Government should invest immediately in strengthening bridges on trunk roads so these could carry the heavier lorries as soon as possible after 1992, when trade barriers between EC countries are due to be dismantled.

Reforms urged over law on bulk buying

By Robert Rice

THE LAW Commission, the Government's law reform body, has called for a change in the law to improve the rights of people who buy goods in bulk.

Although the problem can arise in the consumer sales context, the perceived inadequacies of the law have hit international commodity traders hardest.

The problem for international commodity traders relates particularly to carriage of goods by sea. Where, for example, a trader has bought part of a larger bulk cargo which is found to be damaged when it reaches the port of discharge, the buyer may be without a remedy even though the carrier of the goods caused the damage. This is because there is normally no contract between the buyer and the carrier.

The Bills of Lading Act 1855 allows the buyer to sue the carrier, but only if ownership of the goods passes to the buyer at the same time as the transfer of the bill of lading.

With bulk goods the time at which the ownership is transferred to the buyer is usually delayed until the goods are separated out at the port of discharge. Only the buyer of the entire bulk would have a remedy against the carrier in such circumstances.

The Commission proposes that the Sale of Goods legislation should be amended to allow buyers of part of a bulk cargo to acquire ownership in the goods before their respective parts have become separated from the rest of the bulk.

In terms of the carriage of goods by sea, the commission believes the Bills of Lading Act 1855 should be amended to allow buyers of parts of the bulk to sue the carrier even though ownership in the goods did not pass to them.

This would resolve a problem that has been increasing in recent years. Most European commodity traders trade on English law terms. It is important for invisible earnings for them to continue to do so.

The export of British law and the use of London as the arbitration capital of the world is part of the package.

Rights to Goods in Bulk, Law Commission Working Paper No 112, HMSO, £2.70.

N Sea platform workers continue 24-hour strikes

By James Buxton

THE ROLLING programme of 24-hour strikes by construction sub-contractors in the North Sea continued to affect offshore platforms yesterday.

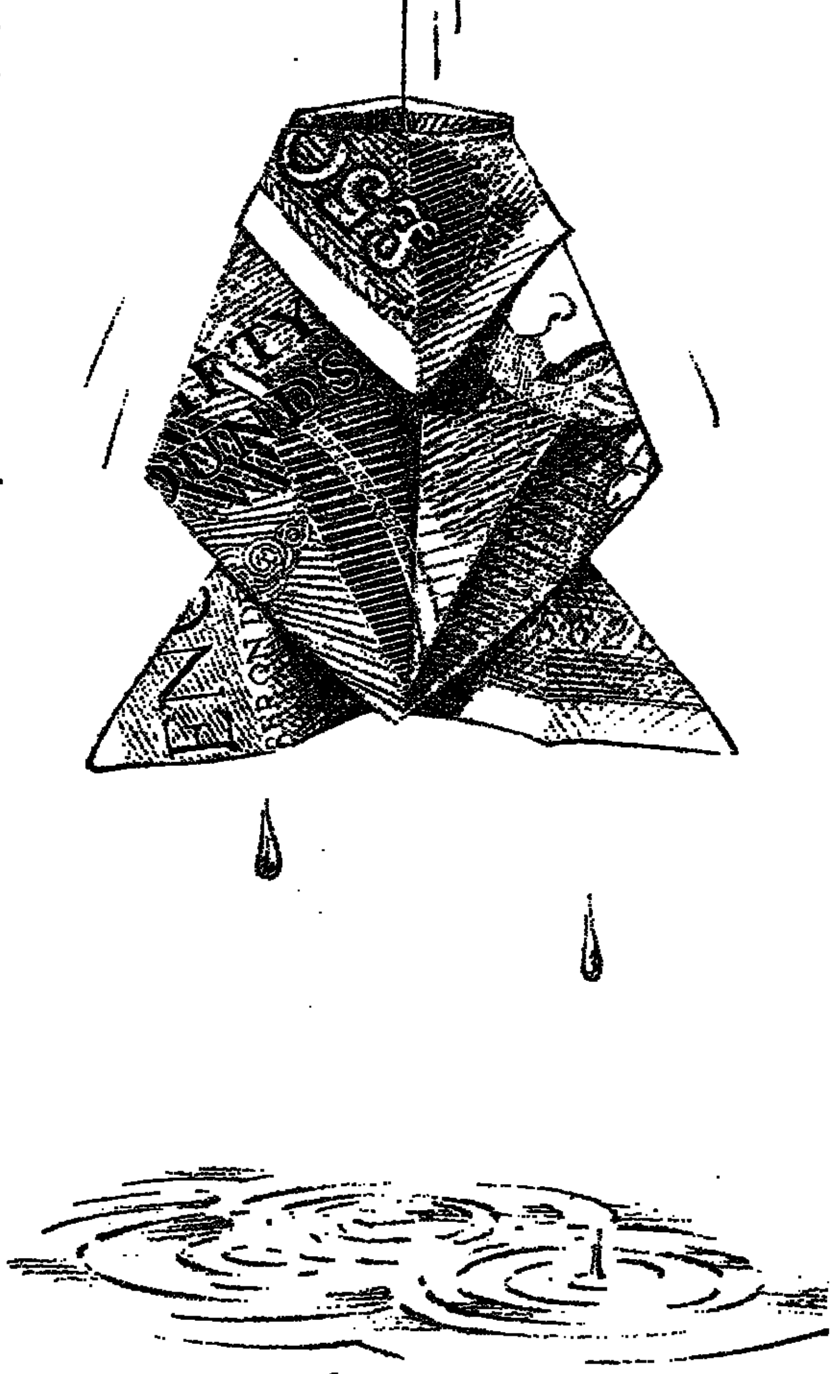
It was estimated that the strikes affected about 21 rigs, although platforms hit by industrial action on Monday had returned to normal.

Union officials estimated that about 1,300 men were involved in the stoppage which affected the Brent, Thistle, Forties and Brae fields.

Among platforms affected yesterday were the two Beryl platforms operated by Mobil, the US group, where 183 sub-contractors stopped work for 24 hours.

The strikes by workers engaged in maintenance and repair work do not affect oil production. They are aimed at securing improved pay and conditions for construction workers employed by sub-contractors.

The AEU engineering union wants the agreement which covers pay and conditions for pre-production work on platforms to be extended to cover work after platforms come on stream. This would mean substantial pay increases for the workers involved.



FT LAW REPORTS

Digest of cases reported in the Easter Term

FROM MAY 16 TO MAY 26

X v Y and Y Establishment
(FT, May 16)

Pending the trial of proceedings against the defendant in Paris, the bank applied for a Mareva injunction to the English court against the defendant who was not domiciled in a Convention country. He submitted that the bank's claim was not within RSC Order 11 rule 1(1)(b) in that the injunction was sought, not as part of substantive relief, but in aid of foreign proceedings. Rejecting the submissions, Mr Anthony Diamond QC stated that for section 25 of the Civil Jurisdiction and Judgments Act 1982 to apply the proceedings had to be commenced in a contracting state other than the UK, in the present case France, and second the proceedings had to be related to "civil and commercial matters." Ancillary relief within section 25 entitled the judge to issue the originating summons and to serve it in Saudi Arabia where the defendant was domiciled.

Re Piccadilly Radio plc
(FT, May 17)

Piccadilly held a licence to operate a commercial radio station from IBA which had the power to determine it if there was a change in shareholding of more than 10 per cent of the voting rights. The articles of association contained provisions designed to protect it from the risk of such determination. In order to further a merger the applicants sought to disenfranchise two registered shareholders by claiming that their shareholdings were transferred to them in breach of the articles. Refusing the application, Mr Justice Millett stated that the IBA was aware of the facts and had made no complaint and there was no suggestion that the licence was in danger. The applicants were aggrieved because the shares had been transferred to a company unwilling to support the offer. A less meritorious claim was difficult to imagine and the purposes for which it had been made was foreign to the statutory remedy which the applicants had invoked.

Continental UK v Cargill UK Ltd
(FT, May 19)

Under a nomination clause in a free on board contract, the buyers gave definite notice of one vessel which was unable to arrive in time. They then purported to substitute another vessel. The sellers refused to accept, the main reason being that the market had moved upwards, and cancelled the contract. Rejecting an appeal against an arbitral award in the sellers' favour, upheld at first instance, the Court of Appeal stated that it was impossible to attribute to the parties a mutual intention that the buyers could nominate another vessel notwithstanding it was too late to give provisional or final notice in respect of that vessel.

Regina v Secretary of State for Transport, ex parte Factortame Ltd and Others
(FT, May 23)

The appellants' 95 fishing vessels failed to satisfy new regulations for the registration of British vessels enacted in 1988. They applied for judicial review to challenge the legality of the legislation on the ground that it contravened EC law. Pending application to the ECJ, the Divisional Court ordered interim relief by granting an injunction against the Secretary of State from enforcing th e legislation in respect of the companies' vessels. The Secretary of State's appeal was allowed by the Court of Appeal and the interim injunction set aside. On the companies' appeal to the House of Lords, it was held that an English court could not decide whether EC law obliged it to make an interim order protecting putative rights. The appeal would be adjourned for the ECJ to rule on the preliminary issue as to whether, where a party claimed EC rights which arguably existed and had direct effect, the national court could give interim protection by suspending the application of national measures pending its ruling.

Baly and Another v Barrett and Others
(FT, May 24)

Just under a year after the writ was issued, the liquidators applied ex parte for an extension supported by an affidavit that investigations were not yet completed: that the issues were complex: and that working papers were voluminous. On the defendants' application to have the writ set aside, the plaintiffs' affidavit made clear that the effective reason for delay was that they had lacked the funds necessary to enable them to prosecute the action properly following service. On the defendants' appeal to the House of Lords, it was held that, in following the principle that the power to extend a writ should only be exercised with good reason (see *Kleinwort Benson [1987] AC 597*), and while lack of funds could amount to good reason for extension, in the present case no satisfactory explanation had been given for the failure to provide the necessary funds in time to avoid delayed service.

Barclays Bank of Swaziland Ltd v Hahn
(FT, May 26)

A writ was served at the defendant's house under Order 10 rule 1(2)(b) by putting it through the letter box of the flat which he owned. Later that day, when the defendant arrived at Heathrow, he was told of the unopened envelope and he took action to avoid receiving it. Only his wife went to the flat and then they both spent the night at an hotel and left for abroad the next morning. In holding that the writ had been properly served, the House of Lords stated that subsection (3) of the rule provided that the date of service, "unless the contrary was shown," was deemed to be the seventh day after the day on which the copy was inserted through the letter box. Beyond a scintilla of doubt, the bank could "show the contrary" – that the deemed date of service ought to be displaced by the date of service – because on the day that the defendant landed at Heathrow, he acquired knowledge of the writ when he was within jurisdiction.

Aviva Golden

This concludes the digest of Easter Term cases. Previous parts appeared on May 31 and June 2.

FT LAW REPORTS

Bank produces inquiry documents

REGINA v SOUTHWARK CROWN COURT, EX PARTE CUSTOMS AND EXCISE; REGINA v SOUTHWARK CROWN COURT, EX PARTE A
Queen's Bench Division (Divisional Court): Lord Justice Watkins and Mr Justice Brooke: May 24 1989

THE RISK of reprisals against the holder of documents needed for drug trafficking investigations in the UK or in a country which is party to the Narcotic Drugs Convention, should not influence a circuit judge when deciding whether or not to order their production to a customs officer, or whether to impose conditions on any order made. And a customs officer to whom documents are produced under an unconditional order may send copies abroad for the purpose of investigations in a Convention country, but may not send the originals in the absence of further order.

The Divisional Court so held when granting an application by the Commissioners of Customs and Excise to quash conditions imposed by Her Honour Judge Pearlman at Southwark Crown Court on an order for production of documents by the Bank of Credit and Commerce International SA. An application by the bank to vary or quash two unconditional orders were refused.

LORD JUSTICE WATKINS said that Mr Asif Abdul Murim Baakza was employed by the bank at its Leadenhall Street branch.

On October 11 1988 he was one of a number of the bank's officers who were indicted in the US for money-laundering and drug offences. The bank and its associated companies were also named in the indictment. Mr Baakza had been charged in the UK with a drug trafficking offence.

Mr Syed Ziauddin Ali Akbar was a director of two companies of commodity brokers. He had an account at the bank, and was alleged to have been involved in money-laundering offences through that account. He had been charged with a drug trafficking offence in the UK, and was named on the US indictment.

On October 10 1988 customs officers searched Mr Baakza's office at Leadenhall Street. They saw files relating to bank accounts involving General Noriega of Panama, who had been named in another US indictment on drug trafficking charges. The files were not covered by the search warrant. On October 17 Judge Pearlman made an order (the "Noriega order") for production of the files, under section 27 of the Drug Trafficking Offences Act 1986.

The bank applied to the court for variation or discharge of the order. The judge heard the application and imposed conditions which deprived the order of its usefulness. The Customs and Excise Commissioners sought to have the conditions quashed.

The judge declined to vary or discharge orders (the "Baakza" and "Akbar" orders) made by two other circuit judges. The bank sought to have those orders quashed or made subject to conditions similar to those imposed on the Noriega order.

The 1986 Act was designed to assist inquiries into drug trafficking, no matter where it took place.

Under section 27(1) a customs officer could apply to a circuit judge for an order for production of material "for the purpose of an investigation into drug trafficking." By subsection (2) the judge "may" order production on fulfilment of the conditions in subsection (4), that there were reasonable grounds for suspecting the material was likely to be of substantial value to the investigation, and for believing it was in the public interest that it should be produced.

Section 22 of the Police and Criminal Evidence Act 1984, as modified by section 29(1) of the 1986 Act, provided that anything produced to a customs officer under a section 27(2) order might be retained for as long as was necessary, "(i)for use as evidence at a trial for an offence or (ii) for forensic examination or for investigation into drug trafficking."

The first issue was whether section 27 of the 1986 Act referred only to an investigation conducted by a UK customs officer in the UK.

Article 4 of the Single Convention on Narcotic Drugs signed in New York in March 1961, provided that the parties should take such legislative and administrative measures as might be necessary to give effect to the Convention and to co-operate with other states. By article 35 they were to assist each other in the campaign against illicit traffic in narcotic drugs, and to co-operate closely with each other.

When drafting the Misuse of Drugs Act 1971 and the 1986 Act, both of which referred to "corresponding laws" in other Convention countries, the draftsman had the UK's international obligations under the Convention well in mind.

There was nothing in section 27 (1) which required that the relevant investigation should necessarily be conducted by UK customs officers. That would be contrary to the legislative purpose of advancing international co-operation.

When a production order was sought to assist a foreign investigation, that must be made clear on the face of the information laid by the applicant, and evidence must be adduced to show the investigation was into possible breaches of a "corresponding law."

The second issue was whether "may" in section 27 (2) meant "must" – in other words, whether the judge had a discretion to make or not to make a production order once the subsection (4) conditions were satisfied.

There was nothing in section 27(2) to suggest that Parliament did not intend the judge to have a discretion. If it had intended her to have no discretion it could have used "shall."

The third issue was whether "retained" in section 22(1) precluded the commissioners from sending the produced material or copies to a law enforcement agency in another Convention country.

Mr Cresswell for the bank submitted that "retained" in the present context meant that the customs officer had no power to let the produced material out of his possession by sending it to a foreign law enforcement agency, nor might he send copies.

If his interpretation were correct, the Parliamentary purpose of giving aid to drug trafficking investigations in foreign Convention countries would be frustrated. Such a result could not possibly have been intended.

The use of "retained" must mean that the customs officer was entitled to keep the produced material back as against the owner or possessor for as long as the 1986 Act permitted. Thus, he would be entitled to make the information in the material available by sending copies to the foreign agency, without parting with the material itself.

The fourth issue was whether the customs officer could send original material overseas.

The draftsmen of the 1984 Act distinguished in section 22(1) between retention for use as evidence at a trial, and retention for forensic examination or for investigation. The terms of section 22(1)(a), which referred to trials in the UK, had not been modified by section 29 of the 1986 Act.

Accordingly, in the absence of any further order, customs officers were not at liberty to send originals overseas for the purposes of criminal trials in other jurisdictions.

Judge Pearlman was persuaded that the section 27(4) conditions were satisfied. However, she was unwilling to make an order unless the commissioners gave an undertaking that they would not remove produced documents or copies from the jurisdiction without leave of the court; nor send or show them to any foreign law enforcement agency without leave.

The imposition of those conditions robbed the Noriega order of most of its usefulness, because the judge was well aware that the UK investigations into General Noriega's alleged money-laundering activities were being conducted in collaboration with the US.

The reason the judge imposed the conditions was there was evidence of risk of reprisals against members of the bank's staff in Panama if the conditions were not imposed.

That evidence was not of a nature to influence UK judges in the exercise of their discretion. There was an *in terrorem* air about it. The courts were not to be deflected, for fear of reprisals, from aiding the international battle against drug trafficking.

For those reasons certiorari should go, and the variation Noriega order containing the offending conditions was quashed.

The unconditional Baakza and Akbar orders were properly made. The bank's application was refused.

For the bank: Peter Cresswell QC and Ali Malek (Stephenson Harwood); Colin Nicholls QC and Clare Montgomery (Peters & Peters).

For the commissioners: Andrew Collins QC and David Ellis (solicitor, HM Customs and Excise).

Rachel Davies
Barrister

JOBS

Why roles in recruitment could soon reverse

By Michael Dixon

SOMEWHERE in Britain flourishes a headhunter with a peculiar weakness. It would be wrong to name him because the flaw has not prevented him from being highly successful in his trade. On the contrary, his skill at filling high-level jobs for companies has enabled him to build up a sizeable consultancy.

The trouble was that, while clearly excellent at finding first-rate people for client organisations, he had a rotten record in recruiting for himself. So a year or two ago when – perhaps by the law of averages – he found himself with a couple of capable senior colleagues, he *delegated them to select staff* for the consultancy which has apparently since gone from strength to strength.

Despite the happy ending, there remains the question of how the same recruiter could do be so good at meeting the needs of other employers and so bad at serving his own.

The most plausible answer the Jobs column can think of lies in something that people seeking a career move seem often to forget. They tend to assume that whoever is offering a post is in the buyer's position, and that they are in the seller's role. But if the offer is being made through a recruitment consultancy, that is not always so.

When the headhunter in question was selecting for his own outfit, he was certainly acting as buyer. And his poor performance at it probably had something to do with the fact that most of the no-noes he wished on himself had not already made their mark in the subcontracted recruiting trade. They were typically company personnel chiefs or line executives whose responsibilites had included taking on staff.

By contrast, the people he shortlists for posts with his client companies are almost always established successes in the same type of work. Moreover, since the decision on who to pick from the shortlist is made by the employer, in the last analysis he is not the buyer. What he has to do is persuade enough evidently well qualified people to put themselves forward as candidates. So the explanation for his success as a consultant could well be that, although bad at buying people's services, he is good at selling jobs.

The distinction is one that people on the candidates' side of the market would probably do well to keep in mind in the years ahead. With worsening shortages of executive and high-grade specialist skills in the offing, it seems likely that those on the employers' side will be starved out of their long-standing conviction that nature *ordains them to* be the buyers, and into honing their job-selling skills.

If so, unless move-seekers realise that their role has also turned the other way round, they will be at increasing risk of being lured into making a wrong move. For few people can be sold a pup as easily as those under the illusion that they are doing the selling themselves.

Greece

TODAY'S first job is in Athens: for a senior treasury specialist being sought by recruiter John Piperoglou of the Stedima consultancy for an international bank's fast growing branch in Greece. Since he may not name his client, he promises to respect applicants' requests not to be identified to the employer at this stage. The same applies to the other headhunters to be mentioned later.

Joining at assistant vice-president rank, the recruit will have the prime task of building the treasury business initially through the existing client network, but progressively by developing new products and customers. In addition,the post entails supervising dealing-room operations in securities and the like.

Candidates should be *successful in similar* work with a highly reputed bank, and if they have experience in foreign-exchange dealing too, so much the better. They also need to be skilled communicators who are bilingual in English and Greek, although I have an idea that a fair working knowledge of Greek as distinct from fluency would be enough.

The salary will be the exchange equivalent of at least £20,000. While that may seem low, the average salary of 38 chief executives of assorted Greek companies covered by the latest Wyatt group survey was £23,500. Perks include car allowance.

Inquiries to Mr Piperoglou at 29 Michalakopoulou St, 115 28 Athens; tel Athens 7245-541, fax 7249-508.

Finance chief

WHENCE to North-east England, where a privately owned construction group is seeking a highly experienced financial director through the agency of headhunter Andrew Nicholson. The newcomer – who, rightly or wrongly, the employer has decided must be aged at least 50 – will be responsible for all aspects of the financial and company secretarial roles, the main task being to *develop the systems* of management information and control.

Candidates should already have led the financial and administrative management functions of a company in construction or a comparable industry. Salary up to £35,000 plus "fully expensed" car.

Inquiries to Mr Nicholson at The Estate Office, Thorganby, York YO4 6DA; tel 0904 89767.

Consultants

RECRUITER Garry Long is in the market for a collection of consultants on behalf of three different organisations.

The first – a London-based consultancy which is not linked with an accountancy concern – wants a director-level recruit with up-to-date know-how in banking and insurance as distinct from broking, and experience as a management consultant in the not too distant past. Since the prime task will be to win a strong share of the finance-sector market for consultancy services, proven business-getting skills are essential.

Pay at least £50,000, with fringe benefits open to negotiation.

The second employer is an accountant-linked consulting group with various offices southwards of Manchester, allowing the two senior people it is seeking a choice of main place of work.

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MANAGEMENT

Mobile telephones

Grasping the opportunity of a liberalised market

Terry Dodsworth describes the strategy that has made Technophone a high flyer

The extraordinary growth of the UK mobile phone business has produced a clutch of millionaire salesmen. But so far this new electronics-based industry has created only one substantial home-grown phone manufacturing entrepreneur – Nils Martensson, an irrepressible engineer-cum-globetrotting salesman who founded the Technophone group just five years ago.

Martensson, 51, qualifies as home-grown by choice rather than birth. A Swede who talks volubly in impeccable English, he first worked on mobile phone telephony at Ericsson, the Swedish telecommunications group, before moving briefly to Plessey in the UK and then setting up his first independent company in Britain and France.

He is an archetypal self-made man – restless, brimming with enthusiasm, and constantly throwing off ideas on both engineering and marketing strategy.

"He wants to be involved all the time," say his associates. "He claims to go on holiday occasionally, but he usually seems to sit in his flat in Florida and keep an eye on the business."

Martensson decided to move to the UK to establish Technophone, he says, because he respected British engineers and was a devotee of the Thatcherite approach to business. Liberalisation of the UK telecommunications market *and the launch of two competing* mobile phone service groups provided the opportunity for a new start-up company. "We needed an open market, an infrastructure of suppliers, and plenty of skilled, experienced engineers," he says. "Most of all we needed *inventiveness – and UK software* engineers are the best in the world."

Technophone's growth since its launch in 1984 has been as remarkable as the mobile phone industry itself. The company had an agonisingly slow birth, as Martensson scoured the City for virtually a year in search of finance. But once he had found backing – a venture fund put up £3.5m, and the Department of Trade and Industry lobbed in a further £1.5m by way of a support for innovation grant – the company has scarcely looked back.

From sales of £600,000 in the year to March 1985, the group had jumped to almost £27m in 1988 and about £50m in the year just completed. After running up losses in the first two years of operation – these amounted to £2.3m in 1986 – Technophone has swung into profits and made approximately £5m pre-tax last year. Martensson has started to export as rapidly as possible, sending 70 per cent of production to markets in Continental Europe, North America and the Far East. He is currently bringing a new plant on stream in Hong Kong.

To achieve this rate of growth, Martensson has had to surmount the problems of an inexperienced, start-up company in a high technology industry populated by several large and well-financed groups. All the big players in the industry – Motorola in the US, Nokia of Finland and NEC and Panasonic of Japan – are divisions of broadly-based groups with large research budgets and extensive international distribution networks.

Martensson's strategy for challenging these competitors has hinged on a two-phase marketing programme.

In the first phase, which has *occupied the initial five years,* he has set out to establish an international position in the niche area of portable phones. Portables, as the name implies, are made to be carried around rather than staying fixed in the car. They are more sophisticated than fixed, in-car prod*ucts because they use clever* software and advanced chip technology to economise on battery power – and as a result of this complexity, they command a premium price.

Martensson's aim in going for the portable niche was four-fold. First, he was convinced that Technophone's advanced design technology for integrated circuits, which form the heart of mobile phones, would give it an early lead in this part of the market.

Second, he thought it would be an easier market to protect than the higher volume sector of fixed car phones. This has so far proved true; it is estimated in the industry that of the 45 or so worldwide manufacturers of car phones, *only 12 make* portables, and only a handful of those companies are strong internationally.

Third, he bargained on the special qualities of the product to generate both cash and customer interest for the drive into international markets. One breakthrough was a distribution deal with Alcatel, the French telecommunications group, which has also taken Technophone into West Germany.

Fourth, he believed that it would be easier to move technologically from the production of portables to fixed car phones than the other way around.

In the longer term, however, Martensson believed that he could not survive solely as a niche producer of portables. From the outset, he says, he has been conscious of the need to expand to a size where he would be able to compete on equal terms with the larger companies in the industry. This has meant triggering the second phase of Technophone's development – a move into the mass market. "We have designed our phones for a consumer, large-volume market," says Martensson. "We didn't see them as mysterious, high-tech equipment, to be made only in small numbers. This is a mass production item, and in the longer term a large proportion of the population in every *country will have one."* Pursuing this mass market, however, means a shift in Technophone's strategy. The largest volume of mobile phone sales lies in fixed in-car handsets, which is precisely the area the company has avoided up to now. Hence the move to *develop the Hong Kong facility* to make cheaper standard car phones aimed at the non-portable market. The drive into this new area of production underlines the knife-edged economics of consumer electronic markets, where success depends perpetually on the ability to adapt. To stay abreast of the technology, for example, Technophone is devoting about 20 per cent of its annual turnover *to research and development,* as against 8 per cent or so in the telecommunications industry as a whole. About 120 of its 500-strong workforce are employed in engineering and design. Part of this expenditure is caused by the plethora of national standards in the industry; but the non-stop improvements in chips and battery technology also demand constant product modifications. Similar rapid developments in production technology mean constant expenditure on the manufacturing lines. Technophone depreciates its machinery over a three-year period, changing its equipment to take advantage of cost reductions provided by the latest automated tools. This speed of development demands that new products have to be exploited as quickly as possible to generate further investment funds. At the same time, prices are being driven down remorselessly in the familiar pattern of consumer electronics markets. The picture varies widely from country to country, depending on the complexity of local standards and the size of the market. But in the US, for example, which accounts for about 50 per cent of worldwide sales of roughly 2m units this year, ex-factory prices of a standard car phone have plummeted from about $1,000 three years ago to $450 today; in the UK, average *wholesale prices stand at about* £450 as against £1,000 in 1986. Up to now, this price depreciation has not imposed a severe squeeze on producers because sales are still expanding fast enough to keep it a sellers' market. The world as a whole is short of manufacturing capacity – a situation that should continue for some time as more and more countries bring mobile systems on stream. But Technophone is nevertheless looking to the longer term future when price competition will intensify and success depend more critically on volume and manufacturing costs. On the manufacturing side, the company has already had one crisis in its early years, when its rawness and inexperience as a production unit led to serious quality problems. At that time, about 60 per cent of its phones were coming off the lines with faults of one kind or another. The search for a solution included bringing in a factory manager, Frank McGovern, who had been trained in Japanese systems at the Hitachi plant in South Wales. McGovern, an unequivocal enthusiast for Japanese manufacturing methods, is credited with a radical turnround on the shop floor. His managers claim that when he *arrived the company's 135 pro*duction line operators were making only 600 phones a month. Today, the 160-strong workforce is turning out 5,000 units a month, with a two per cent failure rate – and output is currently being stepped up to 6,000 a month. At this pro*duction level, Technophone* will still, however, be a minnow in world terms, with less than 3 per cent of the world market, against a level of per*haps 13 per cent at Motorola* and Nokia. To grow, says McGovern, it is now crucial for the company to become one of the industry's low-cost producers. "From now on, this business will be all about capturing large parts of the market. If we don't position ourselves with our manufacturing technology to be a serious contender in the volume market, I don't believe we can continue to succeed." This objective explains the decision to double manufacturing capacity with the plant in Hong Kong, where Technophone is launching its new facility in collaboration with Video-Technology, a local group. "It is cheaper to manufacture in the Far East, where both labour and material costs are lower," says McGovern. There are immense opportunities there for purchasing com*ponents more cheaply*, and you have much greater proximity to your suppliers." Initially, the Hong Kong facility's products will be aimed at the burgeoning US market, which is still heavily biased towards fixed car phones rather than portables. Indeed, it is fair to say *that tackling the US mass* market, the main battleground of Motorola, Nokia and the Japanese, will be a critical test for Technophone's ability to *live up to its ambitious targets.* But Martensson clearly believes that he has to keep running fast now while the opportunities for a small start-up company to establish a leading position in the world market still exist. Signs of the pressures imposed by the bigger companies are all around. Both Motorola and Oki, the Japanese producer, are challenging Technophone's reputation as the manufacturer of the smallest portable in the market; and the company recently raised about £11m by selling its 80 per cent stake in the UK's Excell car phone service

"We think that we shall be able to use our advanced technology to good effect over an ever increasing volume of output and range of products," says Martensson. "In effect, we should be able to move into the *car mobile market with very* much less development effort than for our portable products because we have done so much of the design work already. This should all help us to our target: to be one of the five leading manufacturers in the world in all types of mobile equipment."

Nils Martensson — an archetypal self-made man, constantly throwing off ideas

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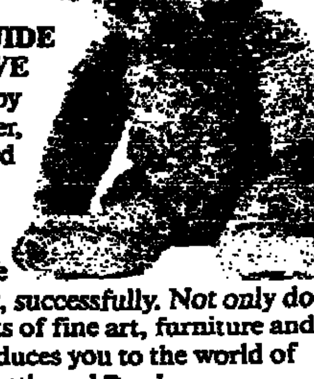

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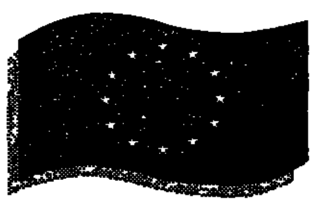

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NOTICE IS HEREBY GIVEN that the One Hundred and Sixty-fourth Ordinary General Meeting of the Stockholders of the Company will be held in the Assembly and Amenities Centre at the Principal Office of the Company, Blackwell House, Aldenham Road, Watford on Thursday, 29th June, 1989 at 12.30 p.m. for the following purposes:

1. To receive and adopt the Report of the Directors and the Statement of Accounts for the fifteen months ended 31st March, 1989.
2. To confirm and declare dividends.
3. To re-elect Sir John Page a director of the Company.
4. To re-elect Mr. Michael Stewart Ross Collins a director of the Company.
5. To authorise an increase, with effect from 1st April 1989, in the aggregate fees of the non-executive directors to a maximum of £50,000 per annum.
6. To appoint auditors in accordance with Section 384 of the Companies Act 1985.
7. To authorise the directors to fix the remuneration of the auditors.
8. To transact the other ordinary business of the Company.

Dated this 7th day of June 1989.
By Order of the Board
J.A. FENNELL
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NOTICE is hereby given that the Annual General Meeting of THE LADY GROVER'S *HOSPITAL FUND FOR OFFICERS' FAMILIES*, will be held at 2.30 p.m. on Wednesday, 21st June, 1989, in the office of Mr. J.D. Simmonds on the Second Floor of Lloyds Bank Plc, 6, Pall Mall, London, SW1Y 5NH.

LEGAL NOTICES

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NOTICE IS HEREBY GIVEN that the Orders of the High Court of Justice (Chancery Division) dated 24th April and 8th May 1989 respectively confirming the reduction of the Share Capital on the above-named Companies were registered by the Registrar of Companies on 29th April and 22nd May 1989 respectively.
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FINANCIAL TIMES
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by Anthea Masey

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TELEVISION

Summer viewing isn't easy

Even if you were locked in a windowless underground dungeon you would still have a pretty accurate idea of the passing seasons, so long as your captors provided a television. The mixture of sport, repeats and old movies which is now beginning to dominate the schedules can mean only one thing: summer is coming. The result is that you have to look considerably harder for the worthwhile programmes than you did during the long winter evenings. Yet, as these notes from a critical diary show, in 1989 there is so much on television that it is a rare day when there is literally nothing worth watching.

Monday May 29

One of those rare days: a bank holiday, so those who have seen *El Cid, How The West Was Won,* and *Superman II* are left with a slim choice. Since *Dream Baby* was written by David Kane, who gave us *Shadow On The Earth*, it sounds promising. However, it does not start until 9.45. Switch on Channel 4 at 9.00 to sample *The Sex Mission* which is said to be a sort of Polish "Carry On" and discover that the story of a future society with no men is, indeed, almost as silly as the popular British farces. But it has a bit of visual style so I stay with it . . . and discover at 11.15 that instead of taping the BBC2 drama I have recorded *Miami Vice* and lots of golf from BBC1. Do drama critics often find themselves in the wrong theatres?

Tuesday May 30

Prior to a summer repeat of the entire series of *Cagney And Lacey*, BBC1 re-runs the 95-minute special with which the whole thing began. The five-minute pre-credit sequence is splendid: fast, funny and tense. Then it slows to walking pace, drops to a stroll, and ends up feeling as though the producers had more time than they knew how to fill. Still, it proves one thing: if only they had managed to keep Loretta Swit playing Cagney, they might have had something very special on their hands instead of just another cop series.

In the first of ITV's new trio of *Hypotheticals* on race, the central ingredient which has proved so wonderfully effective in the past – fiction – is abandoned, and we are treated instead to another round-table discussion about Salman Rushdie and his book. This seems an odd mistake, given the programme's title. For instance, it means that the businessman who trades with Iran cannot play "Let's pretend" and thereby indicate the truth, but has to behave like a politician and skirt the issue.

Wednesday May 31

BBC2's history series *Timewatch* continues to offer excellent and diverse material: today a sketch of a 15th century gentlewoman, obtained from letters and her will; and a sickening account of murderous anti-Semitism in Poland in 1946, of all dates. But what a pity that Peter France is no longer the presenter. His calm presence and splendid voice projected the programme wonderfully well.

The popular British (or is it English?) pose of contempt for all American television continues to baffle me. I think the two best sitcoms running at present are *Bilko* and *M.A.S.H*: both repeats, both screened by BBC2, and of course both American. Tonight's *M.A.S.H* episode which contains two good plot lines (using placebo effect for lack of morphine, and the antics of a recent recruit who out-does Klinger in feigning madness to achieve discharge) are decorated with wonderful dialogue. "I loathe you, Pierce" snarls Charles. "I call your loathe and raise you two despises" sneers Pierce.

Thursday June 1

The conventional social documentary, overshadowed in recent years by trendy fly-on-the-wall material, is back with a bang. Jonathan Darby's programme "Four Days In Summer" in BBC2's *Under The Sun* series gives an amazingly clear account of the way the Sienese organise their notorious horse race, the Palio. The amazement is caused by Darby's success in using a camera and microphone, the most unwieldy of journalistic tools, to investigate the jealousy, chicanery and intense chauvinism which sustain the city's district groupings or "contradas."

Producing a documentary series such as Channel 4's *Propaganda*, with virtually no commentary or spoken explanation is rather like writing a symphony without using the string section: perfectly possible but affected and destructively limiting. Also, in this case, rather suspect: if the makers know where they stand on Nazi and Soviet propaganda why are they staying so quiet?

The only difference between the Chinese government's action this week and those of Hitler, Pol Pot and Stalin is that the genocide was committed in front of the world's TV cameras

Friday June 2

The first of the three parts in BBC2's drama series *Vote For Them* is slow to start. It meanders through some expensive looking desert location shots, hints darkly at political intrigue among the Allied forces in North Africa in 1943 in a jerkily amateurish way, and only towards the end reaches the seeming focus of the drama: a mock parliament in which the troops join rather as Cromwell's soldiers did, presumably, in the Putney Debates. Unfortunately the quality of argument in Cairo seems to have been way below that in Putney.

The only reason one can guess why this rambling and boring material was not promptly passed back to an expert film editor to be knocked into shape is that one of the writers was David Edgar (the other being Neil Grant) whose name, for some reason, seems to be held in awe by those who believe that the subsidised theatre is the be all and end all of contemporary drama. Some in that little band appear to think that drama is at its most clever when most obscure, but out here in the real world the viewing millions prefer their dramatists to be able to express themselves clearly. Of course they have to be clear in their own minds before they can do that.

Sunday June 4

An astounding day for news: the slaughter in Peking (known to ITN as "Beijing;" when do they switch to Mokba and Wien?); the death of Ayatollah Khomeini; and the trans-Siberia gas/rail explosion. Although the BBC scarcely surpasses itself, it does greatly expand its news bulletins and slots in an extra edition of *Newsnight* presented by the admirable Gavin Esler. ITV again proves the disadvantage of being a 16-company federation with all the consequent difficulties over clearing schedules and mounting instant current affairs programmes.

Pol Pot, Hitler and Stalin were responsible for massacring greater numbers of their own people than Deng Xiaoping. History may show that the crucial difference is that the first three committed genocide in secret whereas the Chinese, this week, have been slaughtering their own citizens in front of the world's television cameras.

News apart, it is a packed and fascinating night on the box. *Second Sight* (BBC2 again) is the first in a series of conventional documentaries revisiting women whose lives were first seen on television in the 1960s. Jonathan Stedall's update on Anne-Marie seems at first to be telling us irritatingly little about the girl who had been taken into care by nuns. Then slowly the saga of men and babies, and a second generation of care orders, all comes out. Yet it ends with a clear hint that, with a new man called Steve, the cycle has been broken. A simple, strong programme.

So, too, is Channel 4's *The Last Navigator* which is also beautiful, inspiring and enlightening. Caroline Islander Mau Piailug proves to American Stephen Thomas that by knowing the stars, swell, and cloud he can navigate his giant outrigger canoe across 500 miles of the Pacific from one small island to another with pinpoint accuracy.

It is the Pacific's evening. Part 1 of *The Rainbow Warrior Conspiracy* on BBC2 impresses and entertains by revealing to millions the perfidy of governments, in this case France's. The sinking of the Greenpeace ship in New Zealand, according to this convincing enough account, is a cross between a James Bond and a Fred Karno plot. Add to that *The Grasscutter* on ITV, also set in New Zealand, a fast, tense and well photographed thriller, and it begins to look as though we can add television programmes to the growing list of Britain's Pacific Rim imports in the 1990s.

Christopher Dunkley

Alastair Muir

Jacque Trussel and Maria Ewing

Carmen

EARLS COURT

Opera as spectacle, arena opera, returns to London with *Carmen*, courtesy of Harvey Goldsmith and the sponsorship of the MI Group. In his column on Monday Antony Thorncroft detailed the financial background to this week-long season in the Earls Court Arena, with a production budget of in excess of £3m and a cast running into hundreds.

Unlike last summer's *Aida*, this production by Steven Pimlott, designed by Stefanos Lazaridis, has been specifically tailored for Earls Court and to fill the vast expanses as vividly as possible. The arena is dominated by a bull ring, surrounded by an apron that can rise, fall and rotate; satellite stages offer spaces for visual asides. Three separate sets of principals are required for the opera to play on successive evenings; there is a full flamenco troupe (Paco Pena's Fiesta Flamenca Company), half a dozen bemused horses, and a squadron of specially imported toreadors. There is also, though one could be forgiven for forgetting sometimes, the National Philharmonic Orchestra conducted by Jacques Delacote and like the singers amplified to all parts of the house by an overhead sound system.

The logistics of this operation are so complex one wonders that anything remotely resembling opera can emerge at the end of it. When getting such a gargantuan chorus on and off the stage is a feat in itself niceties like the balance of music and drama tend to get squeezed to the margins, and the fact is that for much of the evening's three and a half hours any connection between what one beholds at Earls Court and what an involving performance of *Carmen* can offer in a purpose-built theatre or opera house is strictly tenuous.

The heart of problem lies not in the spectacle, nor in a production which necessarily dispatches action to every part of the massive set, but in the drastic dislocation of sound and image. I turned up at Earls Court ready to accept the necessity for discreet amplification in such a large space; but the thinness of the resulting orchestral sound, and the congestion caused when several solo voices are combined, are most disappointing. And with all of the sound channelled centrally, marrying voices to bodies is a constant chore; tracking down the source of a vocal lines might take several seconds, in that time concentration is lost and the operatic illusion diluted still further.

Finding the hard core of *Carmen* among the spectacle is another impossibility. There is evidence that Pimlott's struggle to fill the space while still simulating contact on an individual level between protagonists has brought some uneasy compromises – Carmen and Don José eyeballing each other across 30 yards of sandy wastes, Don José and Micaela singing their first-act duet while lapping the bull ring, Escamillo confronting Don José on a steel catwalk strung high above the audience. One would willingly trade Escamillo's entrance in a coach and pair for a few moments of palpable dramatic tension, for a reminder that the opera one is watching has the potential to ensnare its audience in a tragic emotional web.

No cast could overcome all these obstacles. Monday's opening offered Maria Ewing in the title role, her beguiling, multi-hued portrayal pared down to a basic repertory of gestures, though more than her colleagues she tried to make positive use of the amplification by concentrating on inflection rather than worrying about projection. Jacque Trussel's Don José lost tension in his voice by not having to press it for volume, while Alain Fondary cut a better figure when Escamillo was on foot than perched precariously in a carriage. Yoko Watanabe had realised the virtues of doing simple things well in this setting, and her Micaela made one of the most positive contributions. Delacote conducts solidly if stolidly, obviously settling for routine efficiency rather than inspired communication in the circumstances.

Andrew Clements

Ariadne auf Naxos

NEW THEATRE, CARDIFF

In Giles Havergal's new Strauss production for Welsh National Opera, the Composer falls to the ground in a despairing faint at the close of the Prologue. In the Opera proper, he has A Dream – indeed, this part of the work *is* his dream, enacted alongside Hofmannsthal's words, and in defiance of much that we have heard and been told earlier.

To the strains of the instrumental introduction we see Ariadne bidding her husband farewell – the dress of the production is World War 1, and it is thither he is evidently going. Immediately he has departed she receives word of his death, and falls into a mourning swoon: the arrival of Bacchus becomes her fantasy of her lost beloved, who (in the work's final moments) takes his place as a figure on a war memorial. The *buffi* have also, somehow, been made part of Ariadne's grief-stricken imaginings; the Composer is a spectator to all this.

It sounds silly. It is silly: a Bright Idea not swatted at the drawing-board stage, as it should have been, but given the resources of the three companies who are sharing the production (the Minnesota and Vancouver companies as well as WNO). There is a degree of ingenuity about the working-out that carries its own small quota of interest; the designs by Russell Craig are likewise ingenious, the costumes handsome.

But *Ariadne auf Naxos*, as Strauss and Hofmannsthal finally achieved it, is one of opera's most fertile and beautiful disquisitions on the nature of art and the crosscutting of theatre and life. It is already a sufficiently stylized work – the last thing it needs is a new layer of artifice, especially one which appears intentionally to sunder the organic connection between the work's two parts (the Prologue still being played as a backstage comedy at the house of the richest man in Vienna).

The most cherishable aspect of the whole, the interweaving of high and low operatic manners, becomes quite meaningless – and what a tedious lot these *buffi* are! The final duet accrues a certain new emotional impact – it was also, on Monday, the best-sung part of the performance, and seemed at last to stir Charles Mackerras's unwontedly placid, amble-paced conducting to a more familiar mode of energy and forward momentum. (All evening the orchestral playing sounded scrawny and erratic.)

In sum, though, the artistic cost of Havergal's "innovation" is high, and the gain disproportionately small. Monday's performance was put under added strain by the indisposition of Kathryn Harries, the Composer; her youthful replacement, Annemarie Sand, commands warm, full mezzo timbre, but was cruelly taxed by the higher reaches of the vocal writing.

It was altogether an uneven cast. Edith Davis (Prima Donna/Ariadne) is, on this showing, a soprano of generous instincts but uneven vocal quality; she gives herself to the role 1,000 per cent, which in context is a bit much – the opening of the Opera becomes here a right old Greer Garson weepie. Gary Bachlund has godlike good looks and a strong, darkly baritonal tenor; he is not exactly a graceful singer but to the small number of the world's acceptable Bacchuses he makes a worthy addition.

There is an efficient, dry Zerbinetta (Constance Haumann), decently-blending voices for the male quartet and female trio (Harry Nicoll's Brighella/Dancing Master and Eileen Hulse's Naiad particularly noteworthy) and an outstandingly clean, musical Harlequin in Peter Savidge. The work is sung in Tom Hammond's translation: less of a boon than it might have been, given the staging.

Max Loppert

American Bagpipes

ROYAL COURT

A Scottish piper enunciated his windy waffle across Sloane Square on Monday night from the outside circle balcony of the Royal Court. His unheeded droning prefaced the plight of Patrick Nauldie, the artist-criminal-hero of Iain Heggie's second major stage play, who has returned home to Glasgow after a futile career on the pipes down South.

Patrick has been away/inside for seven years. His father Willie is still pounding the beat as a police constable, calling for his tea and his wife. His sister, Sandra, has returned from married non-bliss in New Jersey to complete the family reunion and try and extricate her mother, Rena, whom Willie insists on calling "Bridget", from domestic atrophy. The secrets of Willie's career are kept in a casebook that goes missing in the first act; in the second, Patrick's almost published book, "Family Atrocities", is also swept under the carpet.

As in *A Wholly Healthy Glasgow*, his first success, Heggie reveals a remarkable gift for combining dramatic stasis and verbal vitality. The titular reference to David Mamet's *American Buffalo* betrays an influence that is already proving too strong. While a busily chaotic first production of this play at the Royal Exchange, Manchester, last year convinced me that Heggie was striking out in a farcical, experimental direction, this much tighter, more disciplined revival by Lindsay Posner arouses more doubts.

There are long dead passages in between some hypnotically enjoyable exchanges, most of which involve Ken Stott's thuggishly truculent constable. This is partly because Paul Higgins, replacing Tom Mannion, does not evince the propelling Oresteian vengefulness the role demands. Partly, too, because the second act remains unsorted out and subsides into too feeble a resolution and departure.

Posner's production is certainly a brutal essay in style. It arrives from the Glasgow Mayfest glistening with confidence, a palpable bedfellow to the last piece here, Caryl Churchill's *Icecream*.

The play lacks heart, but never claims it. It sings when it raps on in delayed overlapping misconstructions, harping on feuds over hot water availability and raking up old antagonisms. If looks could kill, Ken Stott is a mass murderer by the interval. Eileen Nicholas, one of our leading Scottish actresses, and Lesley Manville, mother and daughter, inhabit a stylistic strait jacket with energy and aplomb. But the explosion never comes.

Michael Coveney

Bolshoy Ensemble

ALMEIDA FESTIVAL

Fully spelled out, this is the *Ensemble of Soloists of the* Bolshoy Theatre; and they have given an early thrust to the Festival. Visiting here for the first time, they can pride themselves on a longish history of service to the cause of new Soviet music – never really a "samizdat" affair; Soviet bureaucrats were merely slower than Poles or Hungarians to realise that music makes a harmless, attractive export. At home in Moscow the ensemble has been a close analogue to the London Sinfonietta, and many composers have worked with it so closely that they've been reluctant (it seems) to send their music abroad without its accredited performers.

Thus the concerts on Sunday and Monday boasted seasoned performances of a fairly exotic, unfamiliar repertoire. Amid a whole range of disparate individual styles, one Western feature was conspicuously absent: any interest in development in the classical sense, as distinct from freehand variation. Just that was anathema to the "Russian Five" of the last century, too; perhaps after all Shostakovich's passion for it was a Westernised taste. Here, even the most soberly sustained and conservative piece – the Armenian Tigran Mansuryan's Concerto for 'cello and 13 winds – was built in elaborated rondo-style, not by classical argument.

There was a strong flavour of Armenian chant; all the music we heard, indeed, sported definite dramatic colours. Natalia Gutman was the fine, rhapsodic soloist, set off against ritual pronouncements by the winds. Another Armenian piece, Ashot Zograbyan's Serenade, captured an older, pastoral world with raw pungency – herdsmen's pipes skirling – and some wistfulness. A homage to the American George Crumb by the Azerbaidjan Faradzh Karayev evoked Crumb's fragile sound-world with a lusty energy of its own.

From Moscow there was a study in soulful kitsch, "Amoroso," by Nicolai Korndorf. Clearly he knows his Messiaen, as does Valentin Silvestrov, who set Keats' "Ode to a Nightingale" for rapturous soprano (Nelli Lee) over a kind of stately chaconne, sonorous and barely varied. Though the sultry atmosphere seemed right, the musing proceeded without ever taking a new turn. The younger Vladimir Tarnopolsky offered sharply contrasted pieces. In "Jesu, deine tiefe Wunde" an elevated mirror-canon for string trio rose above a tumult of sadistic percussion, whereas his new *Brooklynsky Bridge* is a racketty, pressurised cantata about America (and Russia too) which revels in slangy old pop-style. The tenor Geoffrey Pogson and Miss Lee projected the composer's bilingual text exuberantly.

In "Warum?" Vladimir Shoot played more equivocally with Romantic memories (here, of course, Schumann) in impacted variations. He seemed nearest to Alfred Schnittke, the contemporary Russian whose work is heard most in the West. The three Schnittke pieces in these concerts ran from a 1964 piano concerto – serial music, but sinewy and wryly idiosyncratic, forcefully delivered by Vasily Lobanov – through "Polyphonic Tango," an angry joke at the expense of reactionary Soviet critics, to his recent *Aphorisms*, Webern-laconic and toughly eloquent. Alexander Lazarev conducted everything with infectious commitment.

David Murray

Lou Reed

LONDON PALLADIUM

What on earth is Lou Reed doing playing this week at the London Palladium ? Last time I saw him he was zombeying around the stage, winding mike leads tightly around his arm while evoking "Heroin." If he survived that evening he was surely destined soon to join Hendrix, Joplin and Keith Moon in Heaven's hottest, louchest, rock band. Now, looking like a cross between Cliff Richard, in a trim body and clean cut specs and Keith Richards, in his black gear and nifty cigarette play, while sounding like George Bush with his decorous introductions, Reed seems destined, at 46, to be the great survivor.

He is here to promote a new album, *New York*, his most successful in decades, and the songs from it have a refined, controlled, cut to them which contrasts with the distorted feedback and amateurish egoism of his sixties work with Velvet Underground which he featured spasmodically, and with a certain disdain, on Monday night. His packed admirers would not let him get away without some homage to that romantic, if deadly, period when the Velvet Underground was the house band to Andy Warhol's factory, and the alternative society. Reed played "Dime Store Mystery" in homage of Warhol and although creakingly dated it was a poignant reminder of when we liked our music crashingly, painfully, discordant. After all Lou Reed inspired first Bowie and then the 1970s Punks.

The first half of a generous performance was actually played out against a mock up of a Greenwich Village warehouse loft, with Reed leading a quartet of unregenerate hippies. It was mordant stuff, showing off his skills as a cynical lyricist on songs like "Christmas in February", about Vietnam, performed in his anguished talking delivery, like a musical Leonard Cohen. It was a clever incarnation of 1960s cool, with hardly a wasted word or gesture.

Then after the break it was time for rock and roll, although there was room for such idiosyncracies as Reed's breakneck version of Sinatra's "One more for the road," in which he dueted with a stand up six string electric bass. In songs like "Video violence" Reed showed that he is still a jaundiced observer of the contemporary scene, and was obviously always too clever to kill himself with excess. He kept the best till last, the mesmeric "Sweet Jane" and the anthem of the Warhol freaks "Walk on the Wild Side," still the hippiest song in pop music. Lou Reed has not sold out; he has just aged comfortably.

Antony Thorncroft

ARTS GUIDE

June 2-8

THEATRE

London

The Black Prince (Aldwych). Ian McDiarmid gives the performance of a lifetime in Iris Murdoch's distillation of her own Hamlet novel. Witty black farce, vitriolic and entertaining (836 6404).

Ghetto (Olivier). Brilliant National Theatre version of Joshua Sobol's Israeli play about the last days of the Vilna ghetto and its resident theatre company. Moving and shocking. Nicholas Hytner directs, Bob Crowley designs, good music arranged by Jeremy Sams (928 2252).

Single Spies (Queen's). The highlight of Alan Bennett's double bill is a comic confrontation between Prunella Scales as Her Majesty the Queen and Bennett himself as Anthony Blunt in the royal picture gallery. Simon Callow plays Guy Burgess in a rehash of Bennett's fine TV film *An Englishman Abroad* (734 1166).

M. Butterfly (Shaftesbury). Anthony Hopkins as the tortured diplomatic hero in a Peter Shaffer-style "spectacle of ideas" dressed up in John Dexter's superb production as a metaphor of homosexual life. The transvestite tragedy proves less electrifying than in New York; the play is not very good but still worth seeing (379 5399).

A Walk in the Woods (Comedy). Alec Guinness and Edward Herrmann in feeble off-duty arms negotiation encounter by Lee Blessing. Guinness, back on the London stage after 10 years, is in subtle virtuoso form as the Soviet veteran of tactical stonewalling and no-dealing tricks (930 2578, cc 839 1438).

Brigadoon (Victoria Palace). 1947 Lerner and Loewe "heather-scented" Scottish fairytale hit is handsomely revived and well sung, less frail than expected (834 1317, cc 836 2428).

The Vortex (Garrick). Maria Aitken and Rupert Everett in brilliant reappraisal by Philip Prowse of Noel Coward's 1924 study of drug addiction and mother fixation. Mannered, excessive, beautifully costumed. A must for yuppies (379 6107, cc 741 9999).

Henceforward (Vaudeville). Martin Jarvis and Joanna van Gyseghem in bleakly funny and experimental Alan Ayckbourn comedy of future shock and strained marriage. A tale of obsession, devotion, computer music, women as robots, gangs on the streets and a tug-of-love (836 9987, cc 741 9999).

Aspects of Love (Prince of Wales). Andrew Lloyd Webber's latest is an intimate chamber operetta derived from David Garnett's 1955 novella. Musically interesting and well directed by Trevor Nunn. (839 5972).

New York

Heidi Chronicles (Plymouth). Wendy Wasserstein's award-winning drama covering 20 years in the life of a successful American baby boomer goes from support for Eugene McCarthy's presidential aspirations to electoral ambitions in the 1980s.

Lend Me a Tenor (Royale). A sprucing up in the set of a decaying town's big time opera ambitions makes a transatlantic hit of this farce, first produced in London, but now with a local cast led by Philip Bosco and Victor Garber (239 6200).

Shirley Valentine (Booth). Pauline Collins brings her West End triumph to Broadway in Willy Russell's amusing and touching story of a Liverpool woman's awakening in the Aegean Sea. Simon Callow again directs without smoothing any of the Northern English edges that retain an authentic touch.

Jerome Robbins' Broadway (Imperial). Anyone attracted by the notion of a three hours of film trailer previews will adore this compendium of Robbins' directed and choreographed plays of the past 40 years, including On the Town, West Side Story and Gypsy. The lustre of the credits is dimmed by the brevity of each piece, with a contemporary crew of Broadway aspirants who lack the multi-talents that inspired the musical.

Rumours (Broadhurst). Neil Simon's latest comedy is a self-conscious farce, with numerous slamming doors and lots of mugging but hollow humour that misses as often as it hits. Christine Baranski leads an ebullient cast in the inevitable but disappointing hit.

Cats (Winter Garden). Still a sell-out, Trevor Nunn's production of T.S. Eliot's children's poetry set to music is visually startling and choreographically feline (239 6263).

A Chorus Line (Shubert). The longest-running musical in the US has not only supported Joseph Papp's Public Theater for eight years but also updated the musical genre with its backstage story in which the songs are used as auditions rather than emotions (239 6200).

Les Misérables (Broadway). The magnificent spectacle of Victor Hugo's majestic sweep of history and pathos brings to Broadway lessons in pageantry and drama (239 6200).

Me and My Girl (Marquis). Even if the plot turns on ironic mimicry of Pygmalion, this is no classic, with forgettable songs and dated leadenness in a stage full of characters. It has nevertheless proved to be a durable Broadway hit (947 0033).

M. Butterfly (Eugene O'Neill). The surprise Tony winner for 1988 is a somewhat pretentious and obvious meditation on the true story of the French diplomat whose long-time mistress was a male Chinese spy (246 0220).

Phantom of the Opera (Majestic). Stuffed with Maria Bjornson's gilded sets, Phantom rocks with Andrew Lloyd Webber's haunting melodies in this mega-transfer from London (239 6200).

Washington

Speed-the-Plow (Eisenhower). David Mamet's vivid view of Hollywood as a den of thieving deal makers stars William L. Petersen, Bob Balaban and Felicity Huffman. Ends June 11 (254 3670).

Chicago

Driving Miss Daisy (Briar Street). The touching relationship between a dowager, played in this production by Dorothy Loudon, and her black chauffeur exposes the changes in the South over the past several decades (348 4000).

Steel Magnolias (Royal George). Ann Francis and Marcia Rodd play the leads in this view of southern life from under the dryers in a busy hairdressing establishment (988 9000).

TokyoTokyo

Kabuki. (National Theatre) : Kanadehon Chushingura. The most popular play in the kabuki repertoire, based on the true story of the 47 loyal samurai, is performed in two self-contained parts at 11am and 2.30pm. (265 7411)

Shimbashi Embujo Theatre : two mixed programmes at 11am and 4.30pm , featuring mainly younger kabuki actors, including Kikugoro and the world-famous onnagata Tamasaburo. Both theatres provide informative English language programmes and the National Theatre has an earphone guide in English. (541 2211)

Noh. (National Noh Theatre.) Sendagaya (Wednesday only at 1pm) The noh play, Sohshi arai Komachi (Komachi washing the Page), is performed together with a kyogen comic interlude. Most other Noh theatres are open only at weekends (Check local press for details)

Les Miserables. (Imperial Theatre) Strongly-cast revival (in Japanese) of the stirring musical of the storming of the Paris barricades. (201 7777)

The Phantom of the Opera. Nissei Theatre (045 903 5701). This excellent production (in Japanese) is a carbon copy of the London original.

Blues in the Night. Theatre Apple, Shinjuku. (587 5444). Musical revue from off-Broadway, featuring black music of the 1920s and 1930s. In English.

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Iran after Khomeini

ANYONE WHO expected a sudden transition in Iran from fanaticism to moderation after the death of Ayatollah Khomeini may have had their hopes dashed by the tumultuous scenes at his burial yesterday. Similarly, those who had predicted clerical infighting and confusion in the post-Khomeini leadership have been confounded by the swift succession of President Ali Khamenei, endorsed by a number of potential rivals.

In the longer term, there are reasons to believe that the Ayatollah's death will turn Iran's foreign policy into more moderate channels. It is true that he left a political minefield for his successors in the form of a lifetime's sayings and a vitriolic final testament: his posthumous outbursts against the US, the Soviet Union and Saudi Arabia will doubtless be exploited to the full by purist hardliners seeking to keep the Islamic Revolution within the narrow confines decreed by Khomeini himself.

But Khomeini's oppressive domination of Iran will be impossible to emulate. Indeed both President Khamenei and Mr Rafsanjani, the parliamentary speaker and the man most likely to become the new President in the August elections, *are known for their relatively* pragmatic views.

Foreign policy was one of Khomeini's greatest failures. He tried to undermine the Sunni Moslem rulers of the Gulf states, which encouraged them in their support for Iraq over eight years of war. *He* consistently angered the West and was regarded with suspicion for his anti-communism by the Soviet Union. By contrast, Iraq, despite its own brand of authoritarianism and the killing of Kurdish civilians, came to be regarded as a country where the rest of the world could do business.

Iran's economy might get a breathing space from increased oil revenues this year, but the need for reconstruction is pressing. Relations between the powerful bazaar merchants and a government divided over the role of the private sector have been uneasy. Again Mr Khamenei, with his close links to the bazaar, will probably try to push economic policy in the right direction. Even the Ayatollah conceded before his death the idea of long-term foreign borrowing for large reconstruction projects.

Whether Mr Khamenei and Mr Rafsanjani have enough will or enough *political* power to turn around the Iranian economy and improve the country's international image is an open question. There is not much that the West can do while the domestic drama of the Iranian succession plays itself out. President Bush wants Iran to help release American hostages in Lebanon, and the British Foreign Office wants the threats against Mr Salman Rushdie to be repudiated. They may have to endure a period of Iranian introversion before they get any response.

UK buyouts

IF THE proposed management buyout of the Magnet home improvements group is blocked by institutional shareholders on Friday it will not be the first time that the buyout bandwagon has stalled. An attempt by managers of the engineering concern, Molins, to go private was rebuffed by the institutions only a short while ago. What makes Magnet different is that it is the largest buyout proposal yet in Britain and it is widely regarded as a test case of whether American-style leveraged deals should be allowed to proliferate. The issue has been complicated by protracted debate on the specific terms of the transaction. But on the more general principle, the dissenting institutions' reservations are largely justified.

The most fundamental problem in buyouts relates to the *conflict of interest between* managers and shareholders. Even where the subsidiary of a quoted company is being hived off into managerial ownership, there is often a suspicion that paternalistic group management is passing the buck for restructuring difficult businesses and making lay-offs. The *original shareholders* are the losers. In the case of a quoted company that goes private, shareholders are bound to fear that the management's decision reflects inside knowledge that is not available to the owners of the business.

Increased valuation

Those suspicions are heightened when the bought-out company returns to the stock market or is sold to a third party at a vastly increased valuation. Small wonder that a new discussion paper from the National Association of Pension Fund's Investment Committee argues for buyout terms to be adjusted to reflect subsequent performance.

That is not to deny that there are circumstances in which it can make sense for quoted companies to go private. The stock market often puts a lower value on a business than the management believes is justified. There lies *management's case for the* buyout at Magnet. As long as companies change hands at a premium to their stock market value, performance conscious shareholders will play along.

Conflicts of interest can also be managed in such a way as to avert trouble. Indeed, part of the reason for the controversy at Magnet is precisely that the non-executive directors were less than euphoric in their recommendation of the deal and the company's merchant bankers were not convinced that the premium being paid for control was adequate. It would certainly not be in the wider public interest to do away with one of the few things in the financial system that militates against conglomeration and encourages managers to focus on core businesses.

Fee-hungry bankers

The real trouble tends to *arise where fee-hungry mer*chant bankers are more anxious to do a deal than to strike a sensible balance of risk and reward. Managers can hardly be blamed for taking the bait of a large equity stake and a huge profit-related pay incentive in the knowledge that it is the lending banks that pay the *price if excessive borrowing* brings the company to its knees. Yet such inducements in the US have contributed to corporate sector debt levels that have reached an unprecedented post-war peak.

In the case of Magnet, institutional shareholders, none the less, face an awkward dilemma. A sizeable majority of the ordinary shares favours the buyout. But the terms of the financial package make it difficult for the managers to proceed with the deal unless their offers for both the ordinary shares and the convertible go unconditional with at least 90 per cent support. If the deal is blocked and Magnet, whose directors admit to an over-optimistic forecasting record, falls victim to a sharp consumer downturn with adverse implications for the shares, the majority will have been unfairly penalised. But the institutions would at least have enhanced Magnet's chances of survival by denying *it the opportunity to load its* balance sheet with debt.

Abbey damned

IN GIVING its verdict on whether the Abbey National Building Society satisfied the requirements of the new building societies legislation on its conversion to a public limited company, the Building Societies Commission does not mince its words.

In relation to Abbey's statutory statement of the advantages and disadvantages of *conversion, it diagnoses "nei*ther the care, the quality of analysis nor the objectivity which the commission would expect of the board of a major building society and its professional advisers." There was consequently, we are told, a "significant deficiency" in the information available to the people who voted overwhelmingly to back their board.

By normal regulatory standards that is damning language. Perhaps too damning, especially *in relation to the* Abbey board's statutory obligation to put a case against its own preferred option, which smacks of Lewis Carroll. Indeed, if the situation called for censure on this scale, why did the commission put no more than a technical obstacle across the path to flotation?

The problem is that the real sanction – refusal to confirm the conversion to plc status – is so blunt as to be near-nuclear. It would have constituted a wholly inappropriate penalty to the Abbey board's less than frank salesmanship in the run up to the vote. But nor does the commission's ferocious dressing down entirely fit the bill. Yesterday Abbey was predictably unbothered.

Peter Marsh looks at the challenges and opportunities facing the international pharmaceuticals industry

Prescribing for medical and other headaches

Britain's biggest pharmaceuticals company, Glaxo, is constructing a £500m research campus at Stevenage, 28 miles north of London. In the new laboratories, some of the cream of the world's drugs scientists will work surrounded by ornamental lawns and high-tech gadgetry in an effort to lay the foundations for the group's prosperity *into* the next century.

The new research centre illustrates the visionary, reflective side of the companies in the world's £70bn-a-year drug industry, which commonly spend up to 15 per cent of their sales on research and development (R&D).

The other face of the sector – which carries connotations of a more ruthless, expedient approach and a willingness to scrap for market share – was shown in another Glaxo move last month. A company reshuffle led to the resignation of its highly regarded chief executive of the past three years, Mr Bernard Taylor. He was replaced by Mr Ernest Mario, a hard-driving American executive. Mr Mario was formerly head of the company's US operations and is considered within Glaxo as better able to guide the group through some of the tough times that might be ahead.

Although the drugs business is often regarded as a glamour sector, it is also beset by problems.

- It is continually squeezed by government health agencies and insurance organisations. They are the main buyers for drugs, and they are stepping up their efforts to contain expenditure.
- The costs of pushing medicines through the development trials needed to satisfy regulatory authorities are rising. These procedures are becoming more onerous as a result of increased public interest in safety problems associated with new drugs. They can often take 10 years and cost up to £70m for each new product.
- The researchers at the pure-science end of the R&D pipeline – which accounts for roughly a quarter of total outlays and which is concerned only with ideas and experiments rather than with development trials – have in some ways been too successful.

Thanks to advances in scientific techniques such as biotechnology, and better management of research programmes, the number of new drugs being pushed on to world markets has been edging up.

The number, now running at about 50 a year, may well be up to 60 or 70 a year by the end of the century. Many of these products will not, however, be aimed at completely new applica*tions but are more likely to be small* advances on existing formulations, in areas of heart disease for example.

Mr Mike Burstall, a UK healthcare industry consultant, says: "I wonder how many of the new drugs are going to recover their R&D costs." Due to the climate of cost-cutting among many of the big drug-purchasing agencies, room for expansion in the overall pharmaceuticals market may be limited to no more than a few per cent a year. That will place heavy pressure on the drug industry's sales staffs to crank out decent revenues from the new formulations.

Marketing is already a big financial burden on the drug companies. Unlike the research end of the product-development spectrum, which is highly centralised and conducted by closely knit teams, pharmaceuticals marketing is extremely fragmented. The industry relies for most of its revenues on convincing individual doctors that specific drugs are worth prescribing for their patients.

That entails employing large numbers of sales staff. To cover the whole of the US a big drug company would normally need 2,000 marketing personnel. The sales techniques used are tailored to the prescribing habits and the general cultural traits of the country in which the business operates.

Belgian doctors, for example, are thought to be highly susceptible to persuasion by drug companies about the merits of trying out a new product. Physicians in Britain and West Germany are said to be rather less easy to influence. Sales representatives from pharmaceutical companies try all manner of tactics to get doctors to listen to them – from free pens and notepads to all-expenses paid trips to exotic locations for lavish medicines conferences – and the approach may vary widely from country to country.

Drug companies are not the only ones to talk to doctors in an effort to change their prescribing patterns. In recent years public sector officials, especially in Europe, have made much effort, as part of the general drive to cut government healthcare costs, to persuade physicians to prescribe more generic medicines. These are cheap copies of drugs which are off-patent and are usually cheaper than the branded formulation.

In most European countries, generic products already account for anything between 5 per cent and 20 per cent of the total market. Government pressure means that the proportion is likely to grow over the next few years. That will spell more difficulties for the big, research-based drugs companies which rely on branded products – and an opportunity for the smaller generics groups who do little of their own R&D.

In West Germany, Europe's biggest pharmaceutical market, the official policy on boosting generic products has already had one startling result. In recent months Ratiopharm, a small generics producer, has taken over the top spot in supplying the German market – ahead of Hoechst and Bayer, the two big research-based German drugs groups.

Satisfying the authorities about the safety of a new drug can often take 10 years and cost up to £70m

Some say the industry's best answer to the high costs of R&D and marketing is to seek bigger groupings through mergers. That is one of the rationales behind the proposed Beecham/SmithKline Beckman merger which shareholders of the two companies are to vote on this summer.

A number of large European drugs companies, including Rhone-Poulenc of France and Switzerland's Hoffmann-La Roche, have said they are interested in adding to their operations by acquiring US pharmaceutical groups. Companies said by analysts to be among possible targets include Warner-Lambert, Syntex and American Cyanamid.

But some observers are sceptical. "Bigness does not necessarily mean better," says Dr Joe Zammit-Lucia, a British pharmaceutical consultant. He thinks some drug companies may well shift in the opposite direction, deciding they have more to gain by "contracting out" key functions in either research, development or marketing to other groups.

There are already some signs of such moves, including the establishment of small, 100 per cent research-oriented drugs companies – such as CNS Research in the US and Xenova in Britain – which aim to provide scientific expertise for some of the world's established healthcare companies. A large number of the dozens of biotechnology companies which have been set up in the past decade, especially in the US, may end up largely as producers of research ideas for the giant medicines companies.

At sales end of the industry, Marion Laboratories has gained prominence in the US as a drugs company wholly geared not to research but marketing. It does nothing else but sell prescription products devised in the research laboratories of other groups.

Straightforward licensing deals are also on the increase. They are a particularly flexible way of extending a drugs company's international operations. *In such arrangements*, a business can either use its sales force to market another group's product or give another organisation the rights to sell its own drug in exchange for a royalty.

Big Japanese drugs companies such as Takeda and Yamanouchi have generally refrained from building up their own marketing forces in the *West and have relied up to now on* licensing deals as a way of getting their products sold outside Japan. That may, however, be changing as many of the Japanese companies step up R&D investment and start to use biotechnology to devise new products which could have large sales potential. Many believe the Japanese companies will try to do more to extend control over their overseas operations, possibly by employing their own sales teams. "They are on a fast learning-curve," says Mr Hans-Peter Sigg, vice president of Sandoz, the big Swiss pharmaceuticals company.

As well as widening their marketing reach, companies are also likely to try to increase the geographical scope of their R&D. This seems especially likely with Hoechst and Bayer and Ciba-Geigy of Switzerland, which are generally agreed to have had little in the way of research success in recent years. Setting up laboratories in either the US or Japan – something which all three companies are doing – may be a way of exposing their researchers to new ideas and possibly prodding them into coming up with world-beating products. The three groups – and Britain's Imperial *Chemical Industries – have an* advantage in being parts of large integrated chemicals companies. Thus any poor times in their drugs businesses may be offset by better profits and sales in other operations.

As for production, not much is likely to change. The cost of many of the raw ingredients in medicines is fairly low and the manufacturing processes needed to turn these chemicals into pills or lotions are not particularly demanding, either in terms of plant or manpower.

As a result, much drug manufacturing is organised on what appears an irrational basis. Plants are spread around different markets and are working well below capacity. This is especially marked in Western Europe, where the different national health agencies often let drugs suppliers charge higher prices if they have local manufacturing facilities. The power of these agencies to influence local manufacturing practices will, many observers think, remain strong even after the planned completion of the European single market in 1992.

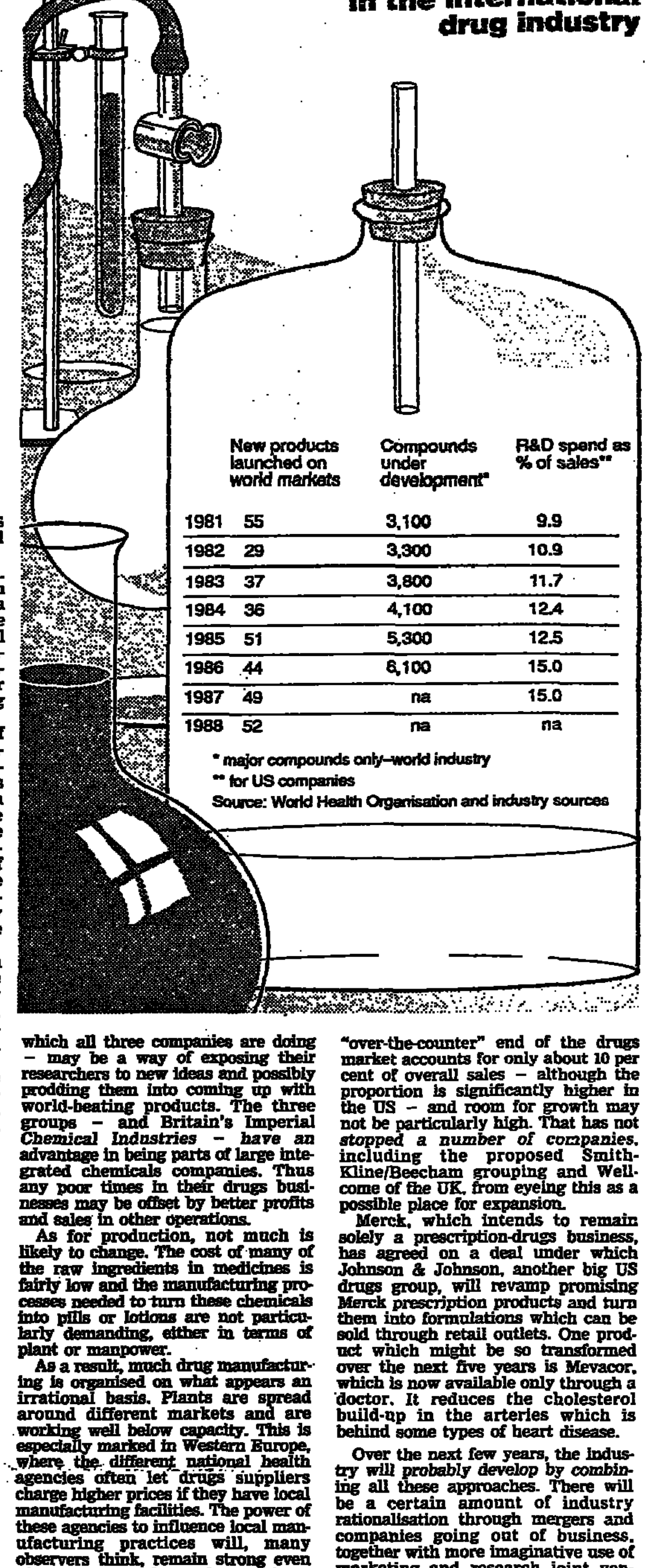
To escape from their dependence on the spending decisions of frugal-minded public authorities or insurance organisations, some drug companies are tending to take products out of the prescription field and into the straightforward retail market. The "over-the-counter" end of the drugs market accounts for only about 10 per cent of overall sales – although the proportion is significantly higher in the US – and room for growth may not be particularly high. That has not *stopped a number of companies*, including the proposed SmithKline/Beecham grouping and Wellcome of the UK, from eyeing this as a possible place for expansion.

Merck, which intends to remain solely a prescription-drugs business, has agreed on a deal under which Johnson & Johnson, another big US drugs group, will revamp promising Merck prescription products and turn them into formulations which can be sold through retail outlets. One product which might be so transformed over the next five years is Mevacor, which is now available only through a doctor. It reduces the cholesterol build-up in the arteries which is behind some types of heart disease.

Over the next few years, the industry will *probably develop by combin*ing all these approaches. There will be a certain amount of industry rationalisation through mergers and companies going out of business, together with more imaginative use of marketing and research joint ventures.

Permeating all these initiatives will be the recognition that the pharmaceuticals industry – which in tackling the ailments afflicting the human race is not short of challenges already – must face up to non-physiological problems that are just as taxing.

Research and development in the international drug industry



	New products launched on world markets	Compounds under development*	R&D spend as % of sales**
1981	55	3,100	9.9
1982	29	3,300	10.9
1983	37	3,800	11.7
1984	36	4,100	12.4
1985	51	5,300	12.5
1986	44	6,100	15.0
1987	49	na	15.0
1988	52	na	na

* major compounds only–world industry
** for US companies
Source: World Health Organisation and industry sources

OBSERVER

Pöhl gets a rival

■ Karl Otto Pöhl, 59, president of the West German Bundesbank since 1980, is watching with some distaste the jousting over filling one of the key places on the central bank's seven-man directorate. Leon*hard Gleske, in charge of inter*national relations, reaches retirement age of 68 in September. Pöhl, who has struck up a close relationship with Gleske and appreciates his sense of humour, will be sorry to see him go.

Hans Tietmeyer, 57, state secretary in the Bonn Finance Ministry, has been promised the job by Chancellor Helmut Kohl. Tietmeyer, a member of the Christian Democratic Union since 1960, served with distinction in the Economics Ministry under Social Democrat-led governments. He was elevated to his present job with the advent of the Kohl government in 1982.

Tietmeyer will bring to the Bundesbank ability and plenty of international experience. He will also roughly double his salary. The pay of Bundesbank directors is a secret, but Pöhl is thought to earn over DM 500,000. (A captain of a top publicly-quoted West German company earns well over *DM 1m*).

Tietmeyer is also ambitious. In spite of Pöhl's well-developed pragmatism, there are doubts about how well the Bundesbank chief – a former protégé of Chancellor Helmut Schmidt, and a member of the Social Democratic Party – will get on with the new arrival.

Tietmeyer looks likely to delay his departure to Frankfurt. Theo Waigel, the Finance Minister, who took over the job in April from Gerhard Stoltenberg, has no experience in international finance and has decided he needs Tietmeyer to help him over his settling-in period. So the state secretary can be expected to stay on in Bonn until the first few months of the new year while Gleske delays his retirement.

Pöhl can hardly complain too much about the parachuting from Bonn. He held the same Finance Ministry job as Tietmeyer in the 1970s. *Schmidt propelled him to the* Bundesbank in 1977 to act as crown prince under the peppery, if brilliant, central bank president, Otmar Emminger. Not bad for someone who set out as a reporter on a local newspaper.

Newcastle's cup

■ Wise Speke, the Newcastle stockbrokers who were beaten only by Cazenove in the number of diplomas from the Securities Industry last month, has scored another triumph. It has won the Northern Stock Exchange five-a-side cup.

The word is that its team scored more goals in a day than poor Newcastle United in a season. That is not quite true, but the Wise Speke side does seem to have a higher average per game.

Northern Stock Exchange is a bit of a misnomer, too. In football terms, it covers the whole of Scotland, the north-east, and the north-west and this year County NatWest even put in a team from London.

The finals, involving 25 sides, took place in Manchester on Saturday. Wise Speke had a bye in the first round, then played four games scoring at *least three goals each time*. In the final they beat County NatWest, Edinburgh: winners for the last five seasons. But it was a close run thing. Wise Speke were three up after eight minutes, but only won the 15-minute match 3-2.

This being a stockbrokers' competition, the rules are strict. No firm may select anyone whom it does not employ; no outside sponsorship either.

Summer show

■ A trek through the rain to a preview of the Summer Exhibition at the Royal Academy. And rather a summery exhibition it turns out to be, inside: fewer pictures this year, but better hung. Around 14,000 works were submitted; 1,185 were selected. Last year there were fewer submissions, but more exhibits.

Such a policy of limiting the numbers is said to discourage the minnows and artists who have yet to be recognised, especially when it is accompanied by a liberal showing of works by the academicians, as it is this year. But it does make for a better exhibition.

Besides, it must be a myth *that there are lots of artists* waiting to be discovered. Go round the academy summer show, and it is a fair bet that the paintings at which you will want immediately to take a closer look are those of the already established artists; Turner goes to Heaven by Carel Weight, for example, and the splendid selection from the works of the late Norman Stevens. This rule of being drawn first to the best applies even if you do not know the *artists' work in advance*.

Incidentally, a London firm of solicitors comes out rather well. For years it had its offices in Great Smith Street, Westminster. It has now moved to Covent Garden. There is a partner in the firm called Cullen, who has a brother called Patrick who is a painter. Patrick Cullen was commissioned to do a painting of the old offices of Beale and Company just before they were pulled down, and very splendid they look.

The work has won the £3,000 water colour prize at the Summer Exhibition and will shortly hang in the new Beale building.

Not so trivial

■ Reports of Trivial Pursuit's death have been greatly exaggerated, according to the game's European distributor, Serif Cowells.

Some 3.2m copies of Trivial Pursuit were sold in 1988, on *the back of massive French* interest in the game. It was the best year since the European launch in 1985.

Trivial Pursuit's general knowledge questions are already printed in 18 languages, and there are 40 to 45 different sets of questions, from sport to pop music.

But European sales are now "maturing", says Cowells. The company yesterday announced it had won the European marketing rights for Nintendo, a video games system which it hopes will become the cult of the 1990s, offsetting Trivial Pursuit's expected decline. Meanwhile, Cowells will be *distributing the latter in the* Soviet Union.

Point of view

■ "Name the famous London monument on which the figure has only one eye" was a question in a general knowledge test at a school in Farnham, Surrey. One 11-year-old girl wrote: "Cleopatra's needle."

Barry Riley reports on a new type of fund manager emerging in the City

The quants are coming

Changing equity markets — different investment techniques

Alan Harper

Later this month, Britain's quants – or to give them their full title, quantitative analysts – will be gathering in unprecedented numbers. Representatives of more than 40 firms are likely to attend the second seminar organised by a new organisation of fund managers called Inquire. They will include analysts from some of the top investment institutions such as Robert Fleming, Prudential Corporation and Phillips & Drew Fund Management.

Considering that only a few years ago the quants were regarded as eccentric boffins, the change in attitudes has been remarkable. The reason is simply that quantitative managers have begun to pull in business on a big scale.

Last year Barclays de Zoete Wedd Investment Management, the market leader in index funds, which are basic quant products, took on more than £1bn of new business. Its total of indexed portfolios is now more than £4bn. That kind of money talks, even in the most traditional corners of the City of London.

According to Inquire's chairman, William Goodsall of Barbican Capital Management, the October 1987 stock market crash served to focus attention on risk, and had perhaps exposed the shortcomings of conventional management. Such managers were suddenly struggling to justify themselves. But more fundamentally, the professional investment business has matured and become more competitive. "Fund management has become a zero or negative sum game for the big players as a whole," says Mr Goodsall. "That has really sunk in."

Like most investment techniques, quantitative management originated in the US. Further big inroads into the UK market are predicted by Andrew Rudd, chief executive officer of Barra, a California-based consultancy which supplies many of the models and techniques used by quantitative managers.

Barra opened its London office back in 1981. Five years ago Mr Rudd made converts of leading managers at Barclays and also at County NatWest Investment Management, now the second-biggest index fund manager.

Although he has since picked up another 40-odd clients in the UK and elsewhere in Europe, Mr Rudd reckons that this is only the first stage of development. These are all, as it were, on the supply side of portfolio management – managers, consultants and brokers. The next step will be to serve the clients.

"It is inevitable that sponsors and trustees are going to become far more demanding of the managers they hire," he says. "This is a natural outgrowth of passive management."

Passive management, usually involving the tracking of an index, is a common way of using quantitative techniques, which include the employment of computer programs and databases. However, quants also run active funds, selecting stocks by statistical methods – for instance, by screening out stocks with the desired characteristics from long lists – and balancing portfolios through risk analysis.

What they do *not* do is come into the office in the morning and decide that Courtaulds is a sell because of adverse exchange rate movements, or that BP is cheap because of trends in the oil market. "Judgmental managers will be out of business within five years," predicts David Damant of Paribas Asset Management, who is Inquire's secretary.

Inquire – which is an acronym for Institute for Quantitative Investment Research – is a somewhat belated clone of the Q Group, a New York body which has 78 member firms. The link with Inquire is through Dale Berman, of the New York soft commission house Lynch, Jones & Ryan, which founded the Q Group and was the catalyst in getting the British group off the ground. He is Inquire's vice-chairman.

Mr Berman has applied a well-tried formula. For a start, the subscription is a hefty £3,000. "People take something more seriously if it carries a price ticket that they have to stop and think about," he suggests. It is hoped that work with a real commercial value to members will be produced. But whatever happens, the status of the quantitative approach should be enhanced. "We do not say that investment is a science, but there are elements of science to it," says Mr Berman.

The coming together of competing commercial firms in this way may not be without strains. Already there is a certain amount of embarrassment in the absence of the two leading UK quantitative managers from the membership list of Inquire.

According to Christine Downton, chief executive of County NatWest Investment Management, she thought "long and hard" about joining but felt that County could not learn much, at least in the early stages. At Barclays de Zoete Wedd Investment Management, too, there was a feeling that Inquire was a group of late-starting firms trying to catch up.

What might County and BZW be missing? "We are not going to tell people how to run their businesses, but we are going to give them a better toolkit," promises Mr Goodsall. Moreover, Inquire aims to provide quantitative managers with a focal point that they lacked before. "They were not always supported by their firms," he observes.

Specific research may include projects on the returns from successfully and unsuccessfully defended takeover situations, while there is thought to be a lot of potential work on cross-border investment.

Next month's seminar is on the apparently dull but potentially crucial subject of international accounting anomalies: the fanciest computer programme cannot successfully pick stocks from an international list unless the information on earnings, cash flow, assets and so on is comparable.

It could all amount to quite a revolution on the fund management scene.

Quants tend to be a different breed of manager. They are often mathematicians or actuaries – sometimes even the ex-nuclear physicists or "rocket scientists" of fund management folklore. They turn naturally to their PCs for inspiration. The managers they replace tend to be arts graduates, and to be rather better at client presentations than they are at handling a Lotus 1-2-3 spreadsheet.

Quants are still thin on the ground. Several fund management firms have been embarrassed recently by the departure of their temperamental in-house gurus more or less in mid-program. To some extent, basic services supplied by consultants, notably Barra, can help fill the gap for low level products such as UK or US index-tracking funds. But already the pressure is on for more sophisticated types of offering.

Global index funds, for instance, have become very successful – spurred on by the dismal experiences many actively managed institutional funds have had in the Japanese and US markets over the past year or so. The next stage is in added value products such as "tilt" funds which attempt to capture an extra plus factor – such as the net worth effect, a degree of outperformance which has in recent years been observed with UK equities featuring high asset backing – and graft it on to the index return.

Beyond that, active quant fund managers seek to outperform the market by analysing risk and return, and using the power of computers to add return in a controlled way. Anomalies are eagerly sought, such as the "January effect" or the "small company effect." Quantitative methods can either be applied at the level of individual stock selection or "top down," that is, in terms of overall tactical asset allocation between different equity markets, bonds and other investment alternatives.

The rise of the quants has not happened without opposition. There are complaints that they do not always deliver what they promise: independent performance measurers have found that index funds often miss their targets by more than the managers claim.

Some of the more complex techniques can come apart in practice. For instance, so-called portfolio insurance, which was supposed to reduce or eliminate the risk of a declining equity market, was marketed heavily to US funds during 1986 and 1987, but disintegrated in chaotic market conditions during the October 1987 crash.

But, according to Andrew Rudd, the revolution is getting under way in the UK. "Very few active managers in the UK have really thought about where their information comes from and how they make use of it," he says. "To provide added value you have to know what advantage you enjoy relative to the competition."

Many of the big traditional fund managers in Britain have begun to hire quantitative analysts. This does not yet mean that they have become converted to the belief that the new approach is superior. But at the very least the quants have become respectable.

US-Japan relations

Why managed trade is a bad idea

By Robert Lawrence

For most of the post-war period the US has sought a liberal trading order. But Americans have become so vexed with Japan that today many are calling for a new objective. If they have their way, should the current US approach to Japan using the Super 301 framework not show results, the US will change its demands. Instead of trying to get Japan to play by the rules of free trade, US-Japan trade will be managed to guarantee results.

A managed trade agreement with Japan may make numbers look better in the short term, but the long-term impact would be disastrous. To implement a managed trade policy now, just as the Japanese economy is becoming more open, would hurt the US and reinforce those features of Japan that have made its market so difficult for foreigners to crack.

Japan's imports of manufactured goods are unusually low for an economy at its stage of development. While some economists question whether import barriers play a role in this pattern, the big price differences for the same products in Japan and elsewhere suggest something prevents market forces from arbitraging these differences away.

A specific version of managed trade, proposed by Henry Kissinger and Cyrus Vance, would limit the trade deficit between the US and Japan to a dollar total. But this would not open the Japanese economy. Japan would prefer, as it always has, to meet such a limit by restricting its exports to the US.

What is worse is that no one would be more delighted by this form of managed trade than the bureaucrats at Japan's Ministry of International Trade and Industry (Miti). Mr Kissinger and Mr Vance would be giving Miti the ability to deprive or grant Japanese firms access to the US market. Miti would use its enhanced power to implement its vision of Japan as a superpower in high-tech products. It would favour such products a semiconductors, computers and high-definition television. US firms in these industries would still feel the brunt of Japanese competition and would still rush to Washington seeking protection. Having taken care of its strategically important products, Miti would distribute the remaining export opportunities to the firms that could get the highest prices in the US market.

A second version of managed trade puts the focus on what Japan buys. A report, recently submitted to Mrs Carla Hills, the US Trade Representative, by her Advisory Committee for Trade Policy and Negotiations, proposes making Japan adhere to numerical targets for the imports of particular products. This approach settles for ensuring that Japan merely pays a tithe to foreigners in exchange for the freedom to export to them. Industry-by-industry targets can only be enforced if MITI is given the power to organise buying cartels. This in turn would create a Japan Inc.

Even acting in good faith, the Japanese government could not carve up many of its economy's markets for foreign goods. You can put goods on the shelves but you cannot make people buy them. Even where it did succeed, it would be counter-productive. Forcing the Japanese to buy goods by government edict is hardly the way to enhance the reputation of foreign products in Japan.

Managed trade is simply a bad idea. It replaces competition among firms with competition among bureaucrats. The division of powers in the US political system is particularly ill-suited to managing the details of the economy. In the US any attempt to divide up the pie would not be based on strategic economic and trade criteria. Rather, it would be based on political trade-offs that would reflect lobbying skills and masquerade under the rubric of "fair shares."

US policy towards Japan needs a two-pronged attack – detailed reforms in specific industries complemented by the broad incentives of a strong yen. There is no substitute for the unpleasant task of negotiating in detail changes in the specific practices that prevent foreigners from doing business in Japan. It will take administrative energy and political commitment.

Contrary to conventional wisdom there is evidence that tough detailed negotiation to change rules works. The report issued to Mrs Hills notes that after years of pressure, virtually all barriers to US sales of tobacco in Japan have fallen. It also says that the talks about medical drugs and equipment, electronics, forest products, and telecommunications have paid off. From 1985 to 1987, US exports to Japan in these four categories combined rose by 47 per cent – twice the growth rate of total US exports to Japan. Negotiations with Japan have also opened the markets for beef and citrus. The problem therefore has not been the approach, but the limited resources and narrow focus of the talks.

Such negotiations must be reinforced by an even steeper rise in the value of the yen and not simply a reversal of its recent unfortunate drop. The discussion in Washington about US-Japan trade is like a broken record. It displays an amazing ignorance of the profound changes currently under way in Japan, which result from the strong yen. In the last three years the volume of Japanese manufactured goods imports has increased by 80 per cent. In 1988, total US exports were 67 per cent more than in 1985; US manufactured goods exports were up 79 per cent. Attractive prices, attributable to the strong yen, are raising the share of foreign products in Japanese markets. Japanese consumers are at last realising that their closed market prevents them from enjoying cheaper foreign goods.

It would be foolish to set Japan back on the road towards managed trade. The Japanese are finally freeing their market after years of American pressure. The US should try to keep the yen strong and not give up trying to level the playing field. If it tries to rig the game, it will not be one worth winning. It would be ironic if the US were to abandon its post-war strategy of calling for free trade just at the time that Europe, the Soviet Union, and many developing countries were affirming the merits of the market.

The author is a Senior Fellow at The Brookings Institution in Washington DC.

LETTERS

Put the cap on straight

From Mr Michael Elton.

Sir, May I comment on Eric Short's article (June 3)?

Following the Chancellor's Budget speech, we certainly approached the issue of proposals to impose an earnings cap on pension benefits qualifying for tax relief with "dignity and decorum." But this had only produced an adamant rejection of our representations.

It is unfortunate that it should be thought "naive" to rely on Mr Lawson's pledge, in his 1985 Budget speech, not to introduce a fundamental reform without first publishing a green paper. It would be a sad day for democracy if that were so.

The Finance Bill is already in its committee stage. The time is short if we are to get across that we are not ashamed to expect the Chancellor of the Exchequer to stand by his pledge.

Michael Elton,
Director General, The National Association of Pension Funds,
12-18 Grosvenor Gardens, SW1

Bio-Isolates

From Mr Alan Staple.

Lex has got it wrong (May 31) in classing Bio-Isolates as a boom/bust biotechnology stock that is now being set straight by a large company.

The initial rise in Bio-Isolates' share price, from the 38 pence issue level to 425 pence, had more to do with the share marketing practices of Mr Chander Singh and his now defunct London Venture Capital Market, as well as the tiny size of the initial issue (875,000). The subsequent retreat of the share price below the issue level reflected the company's poor results.

Since 1986 Bio-Isolates has increased sales at a rate of over 50 per cent a year, and turned a loss of £562,789 in 1985 into a profit for 1988. Shares have responded accordingly.

Bio-Isolates is not involved in the fermentation, monoclonal antibody, or hybridoma techniques used by many biotechnology companies. Instead, Bio-Isolates has successfully exploited an ion exchange technique for separating pure protein from cheese whey.

Alan Staple,
219 North Churton Street,
Hillsborough,
North Carolina, USA

Domestic difficulties

From Mr John Coleman.

Sir, Reports such as yours, on the way the Euro-elections are being used for domestic purposes (June 5), force one to the conclusion that it was a mistake to turn the European Assembly into a directly elected Parliament in 1979.

Such as it is, we must face the fact that Europe was not ready for such an initiative. The founding fathers were wise to place the limits on it that they did, and probably would not have expected them to be abandoned after such a short time.

The fundamental problem with the European Parliament is that it serves to heighten the sense of individual national sovereignty in the member states at a time when it is becoming increasingly clear that what is required is not the extinguishing of national sovereignty, but a softening of its expression so that the way to true European harmony and unity is prepared. We have seen in the Soviet Union the dangers of suppressing rather than civilising the instincts that make people want to rule themselves.

It is not only in France, but everywhere that we read of the European elections being used to fight the domestic battles within the member states. There should have been no question of "democracy" at the European level until we had evolved an understanding of what the real European issues are, and separated them, on the one hand, from what is global, and on the other from what is rightly the province of national governments.

Clearly, many of the arrangements for trade would be *more* than European if we are going to avoid creating a "fortress Europe." Many of the regulations that emanate from the Commission are *less* than European, and they ought to be created and applied as closely as possible to the people they affect, not in far away Brussels.

That Brussels and Strasbourg have their roles is indisputable, but to act out those roles before we achieve common agreement about the issues that are genuinely European will slowly destroy the Community.

John Coleman,
Editor, New European,
14-16 Carroun Road, SW8

Demand is not the problem

From Mr Brian Reading.

Sir, Tim Congdon argues (Letters, June 6) that "when a non-bank agent buys a new issue of government debt it writes out a cheque to the Government, and this reduces its bank deposits. The effect is to cut monetary growth." That depends on what the Government then does with the money it receives.

Because the budget surplus is not increased by overfunding, the national debt cannot have been reduced. The Government must therefore use the excess funds it obtains from overfunding to reduce some other form of government borrowing or to increase government lending. In the past it has bought commercial bills (that is, increasing its lending to non-bank agents), but it could equally reduce the Treasury bill issue. Either way it pays cheques to the same amount to non-banks or to banks. Its cheques to non-banks directly replace lost deposits. Then all that is changed are relative interest rates between gilts and other securities which, as Mr Brittan has argued (June 1), has merely a cosmetic effect.

A more important flaw in monetarist thinking is Mr Congdon's assertion that "reductions in the growth rate of broad money (were) a necessary and sufficient condition for a reduction in inflation."

They are indeed necessary. But in the short run they are not sufficient: the initial reduction in nominal GDP is usually because of lower real output instead of slower inflation. In the medium term lower real GDP causes higher unemployment. Lower real output also lowers investment in new capacity. The capital stock shrinks, and in the longer run inflation accelerates or the balance of payments deficit grows, at a higher level of unemployment than before.

Britain's problem is too little industrial capacity, not too much demand. But you will never persuade industry to increase the amount it is able to produce by reducing the amount it is able to sell.

Brian Reading,
83 Shakespeare Tower,
Barbican, EC2

Kashmir's future

From Miss Brigid Keenan.

Sir, David Housego writes that Kashmir "was the one Moslem-dominated state that refused to unite with Pakistan and choose instead to remain with India" (May 6).

He does not mention that for 110 years the Moslem people of Kashmir had been ruled by a Hindu Maharaja who, alarmed by the rapid advance into Kashmir of a horde of 2,000 ill-disciplined Pathan tribesmen (hardly "troops"), promised Kashmir to India in exchange for the immediate assistance of the Indian army in expelling the invaders.

No decision about Kashmir's future had been made before that invasion. Indeed it had been agreed to hold a referendum to allow the people of Kashmir to choose for themselves. Whether or not the referendum would have taken place we will never know, for the tribesmen's invasion forced history's hand. India therefore kept both Hyderabad (predominately Hindu with a Moslem ruler) and Kashmir (predominately Moslem with a Hindu ruler).

After the Indo/Pakistan war in Kashmir in 1948-49, the UN security council proposed again that a referendum should be held, but India has always refused to recognise this proposal.

Brigid Keenan,
Delegation of the Commission of the European Communities in the Gambia,
10 Cameron Street,
P O Box 512,
Banjul

Pay at the top

From Mr C.D. Power.

Sir, Your article "BA chairman doubles his pay" (June 2) is, at best, naive. The remuneration of chairmen of public companies typically consists of a base figure, objectively determined by a committee of non-executive directors, plus (in some cases) an incentive payment calculated according to a pre-agreed formula linked to the company's performance.

The implication that a chairman fixes his own remuneration is grossly misleading.

C.D Power,
Spencer Stuart,
113 Park Lane, W1

FINANCIAL TIMES
Wednesday June 7 1989

Hysteria disrupts the burial of Khomeini

By Tony Walker in Tehran

THE BODY of Ayatollah Khomeini was eventually buried yesterday in a dusty grave at a vast necropolis outside Tehran, after hysterical scenes had forced a delay to the funeral.

Earlier, as the first attempt to bury Iran's spiritual leader got under way, frenzied mourners grabbed at the white funeral shroud that covered the body, ripping it to pieces and causing the corpse to fall to the ground. This occurred when the body was being transferred from a helicopter as it arrived at the burial site on Tehran's outskirts.

The bearded corpse was hurriedly placed in an ambulance and then back in the helicopter while officials desperately sought to restore order among a weeping and frenzied crowd of mourners.

The body was finally buried at about 4.30pm, Tehran time, some six hours after the first attempt. So dense was the crowd around the specially constructed mausoleum that the authorities were forced to ferry the coffin and principal mourners to the gravesite by helicopter. As the coffin was lowered into the grave amid clouds of dust kicked up by mourners, some of whom tried to throw themselves into the grave, a military salute was sounded.

A near-hysterical commentator on Tehran television alternately sobbed and prayed while describing the extraordinary scenes at the Behesht-e-Zara cemetery, where tens of thousands of war dead from the Gulf conflict are buried. "Oh Khomeini," the commentator choked repeatedly into the microphone as the coffin disappeared.

Revolutionary Guards in khaki uniforms fought desperately to keep back the crowd of mourners and to protect dignitaries at the graveside. The emotional frenzy whipped up by the father of Iran's revolution presented the authorities with a massive security problem.

At least eight people were crushed to death on Monday and hundreds injured at a huge prayer ground north of Tehran where the body was lying in state. Many more were injured yesterday and there are believed to have been further fatalities.

Newspapers carried Ayatollah Khomeini's last will and testament in which he urged Islamic people to rise up against the godless West and atheistic communism to create a divine Moslem nation, "the greatest power in the world."

Few Iranians believe that the leadership transition will pass smoothly. Many are bracing themselves for further upheaval. Ayatollah Khomeini dominated his country since he returned to Iran in 1979 after the Shah's removal in a popular uprising. His death at 86 leaves a vacuum.

Editorial comment, Page 24

Iran's uneasy power-sharing deal

Tony Walker in Tehran analyses the chances of two former rivals being able to rule without challenge from more radical factions

"TOO MANY power centres is just as bad as the concentration of power in the hands of one man," was the observation made in April by President Ali Khamenei, successor to Iran's deceased spiritual leader, Ayatollah Ruhollah Khomeini.

The words seem curiously relevant today as Ayatollah Khamenei – the 49-year-old President was hastily elevated to senior clerical rank on Sunday – prepares to assume some of Khomeini's responsibilities, although without his prestige.

What has emerged since Khomeini's death at the weekend is the makings of a leadership deal between Khamenei and his former rival and putative replacement as president of the republic, Hojatoleslam Ali Akbar Hashemi Rafsanjani, presently the powerful parliamentary speaker.

Khamenei (left) and Rafsanjani: together they would be responsible for the spiritual and temporal direction of Iran

Mr Khamenei and the 54-year-old Mr Rafsanjani, under this arrangement, will share responsibilities for the spiritual and temporal direction of Iran. However, it would be extremely surprising if all goes smoothly and if the two are able to rule without challenge from more radical factions in the leadership.

"It is obvious now that Khamenei and Rafsanjani have joined camps," said one Iranian observer. "For the time being, the more radical elements grouped around Hojatoleslam Ali Akbar Mohtashemi, the Interior Minister, have been obliged to sit quiet."

A new constitution, a draft of which was circulated almost on the eve of Ayatollah Khomeini's death, helps to establish the framework for a new leadership structure that would accommodate, in the short term at least, the ambitions of both President Khamenei and Mr Rafsanjani.

The proposed changes are due to be put to a referendum on August 18 – the same day as the presidential election – and would vastly increase the authority of the presidency, changing the post from a largely ceremonial to an executive role.

A job is in effect being created for Mr Rafsanjani who, together with Mr Khamenei, was one of the vice-chairmen of the constitutional drafting committee. The question is whether ambitious men in the quarrelsome upper echelons of the hierarchy will allow the new leadership to settle down or seek to disrupt the arrangement.

The authorities are evidently sensitive to the possibility of upheaval, and great emphasis is being placed on unity in the immediate aftermath of Ayatollah Khomeini's death.

Hojatoleslam Ahmad Khomeini, Ayatollah Khomeini's influential 43-year-old son, remarked after Mr Khamenei was confirmed as his father's successor that "to the bitter disappointment of the Islamic Revolution's enemies, they have now witnessed that we were able to choose a new leader within hours of the Imam's death."

Although Ayatollah Khomeini did not specifically nominate President Khamenei, whose second term as president will end with the elections, claims are now being made that after the fall from grace in March this year of Ayatollah Hossein Ali Montazeri, the previously designated successor, Iran's spiritual leader had indicated a clear preference for Mr Khamenei.

At the most, it seems Khomeini merely mentioned Mr Khamenei as a possible alternative. In the absence of an obvious successor with sufficient prestige and authority, Mr Khamenei became a compromise choice.

Some Iranians believe the swift decision was motivated by an almost desperate desire to preserve the Iranian revolution from challenges that might materialise at the first signs of fragmentation of the leadership after Ayatollah Khomeini's death.

"I was surprised it was done so early and so emphatically," said one Iranian observer. "It was almost a sign of weakness . . . of hysteria."

Significantly, various powerful elements in Iran, including the Revolutionary Guards and the regular army, almost immediately pledged their allegiance to Mr Khamenei.

Mr Khamenei and Mr Rafsanjani, whose conspicuous rivalry of two or three years ago has subsided – at least in public – are in some respects complementary individuals. While Mr Khamenei is an erudite and somewhat scholarly figure with impressive qualifications in Islamic jurisprudence, Mr Rafsanjani is a more earthy type better equipped to communicate with the masses.

Both have good revolutionary credentials. Both were jailed during the time of the Shah, and both were long-term disciples of Ayatollah Khomeini. Although relatively youthful, they are members of the Iranian Revolution's historical leadership.

Both appear to have sound connections with the military and with the Revolutionary Guards, which could prove crucial in the weeks and months ahead. Their doctrinal views on critical issues facing Iran such as the role of private business, the desirability of foreign borrowing, land reform and relations with the outside world are not clearly defined, but their records suggest a relatively flexible approach.

It remains to be seen if they will feel free to initiate reforms that might be interpreted as contradicting Ayatollah Khomeini's wishes.

The deceased spiritual leader leaves behind a vast litany of views and pronouncements on almost every subject under the sun. These could be used by the various factions to justify opposition to almost any new course of action.

There is no certainty that the paralysis in policy-making that has characterised the years of the Iranian Revolution will end.

If there is a hopeful sign for the West in the emerging new leadership, it lies in the fact that both Mr Khamenei and Mr Rafsanjani have exhibited a relatively pragmatic view of the outside world. Mr Rafsanjani particularly has spoken of the need for Iran to build bridges to its neighbours and to the West – to end its isolation. There has been no indication that Mr Khamenei disagrees with this perspective.

It was also notable that both men were conspicuously unenthusiastic about the campaign against Salman Rushdie, author of The Satanic Verses, the book in which references to Islam offended Moslems. Both Mr Rafsanjani and Mr Khamenei fell into line only when Ayatollah Khomenei turned the issue into a *cause célèbre*. Mr Khamenei, in fact, had at one time suggested that Mr Rushdie could be pardoned.

Security alert as Uzbekistan riots claim 50 lives

By Quentin Peel in Moscow

THE SOVIET UNION'S seething ethnic tensions burst into the open again yesterday, as the death toll in bloody clashes between rival groups in the central Asian republic of Uzbekistan rose above 50.

A huge security operation, involving more than 6,000 Interior Ministry troops, is under way in the Fergana valley of the republic, where intoxicated Uzbek youths went on the rampage at the weekend, murdering dozens of minority Meskhetian Turks.

Full details of the riots emerged only yesterday, after earlier official reports put the death toll at only two. They came as deputies in the country's new Congress of People's Deputies disagreed bitterly on national relations, with a storming speech by Mr Valentin Rasputin, a leading Russian writer, in defence of Russian nationalism, and a walk-out by Estonian deputies.

The extent of the death toll was confirmed by Mr Rafik Nishanov, leader of the Uzbek Communist Party, as he was elected to the important post of chairman of the Soviet of Nationalities, one chamber of the country's new standing Parliament.

He blamed the furious rioting in Ferghana on "the vandalism of Uzbek youth," many of them drunk or high on drugs, who had attacked the rival Meskhetian community with chains, axes and sticks, and set fire to their homes.

Reuters last night quoted an Uzbek journalist who put the death toll at 56, of whom 43 were Meskhetian Turks. Another 385 Turks and 136 Uzbeks were in hospital, as were 17 soldiers and five policemen.

The Meskhetian Turks originally came from south-west Georgia, on the border with Turkey, but were deported by Stalin in 1944, accused of providing "a stronghold for foreign subversive groups."

Some 160,000 who live in Uzbekistan have been campaigning ever since to return to their homeland.

Mr Nishanov blamed the immediate cause of the riots on a fracas over the price of strawberries in a local market, followed some days later by renewed clashes in which one Uzbek youth had died.

In the Congress of Deputies, all the issues of national ferment burst into the open, leading to a passionate outburst from Mr Rasputin.

"Russo-phobia has spread to the Baltics, Georgia and other republics," he said. "Anti-Soviet slogans are interchangeable with anti-Russian slogans." He accused "emissaries from Lithuania and Estonia" of creating a united anti-Russian front.

To stormy applause, he called for Russia to leave the Union, rather than the minority republics.

THE LEX COLUMN

Brands back in the spotlight

The price paid by BSN for Nabisco Europe revives issues dormant since the Rowntree deal. Perhaps the Europe-wide consolidation of the food industry is a reality after all. Perhaps, too, the yawning gap between stock market and industry valuation of brands is overdone. BSN seems to be paying 27 times prospective earnings, more even than Nestle paid for Rowntree: while United Biscuits – the closest parallel to Nabisco Europe, and a vastly stronger company – is on a multiple of 12.

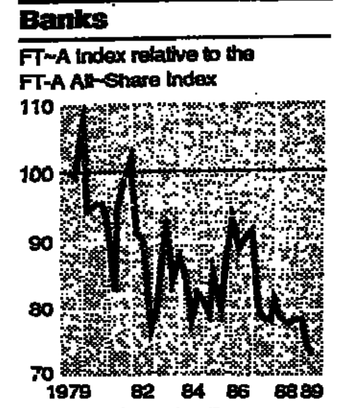
But like Nestle, BSN is paying twice: once to get the brands, and again to deny them to others. The deal makes it market leader in UK crisps and snacks, and number two in UK biscuits, besides consolidating its position in France. But it also slams the door on UB's most obvious route into European biscuits, and Pepsico's into UK snacks. In the process, BSN will be gearing itself to formidable levels; but a rights issue is not unlikely, and it could still choose to sell on selected bits to the other thwarted suitors.

For KKR, the price is as much as could be hoped for, and lends credence to a target of around $3bn for Del Monte. The shock waves will be felt more in the UK, which accounts for two thirds of Nabisco's European sales. UB's shares rose on the deal, presumably through relief that it will not be paying silly prices for Belin or Saiwa. But the market may subsequently reflect that BSN, previously touted as a bidder for UB, is instead a competitor which may well prove more durable than Nabisco did.

But perhaps, in the end, the market will come back to brand valuation. UB is one of three top-class branded food companies in the UK. Of the others, Cadbury has General Cinema on its tail, and RHM has Goldsmith. Having paid this kind of money for second best, BSN might well ask itself who will end up in charge of UB.

Banks

FT-A index relative to the FT-A All-Share Index



Abbey National

The Abbey National management must be grateful that it has escaped from the clutches of the Building Societies Commission, and will now be supervised behind the closed doors of the Bank of England. Even if the Bank felt strongly about the Abbey's behaviour it would not launch the sort of public attack that the BSC did yesterday. No doubt the BSC has to be seen to be doing its job, but the severity of its criticism of the Abbey board undermines its own credibility. If it feels so strongly, it should have blocked the flotation; or, given the importance of the move for the entire building society movement, it should have taken the initiative and appointed its own independent advisers to challenge the Abbey's case.

The BSC's intervention, which might have something to do with the fact that it has just lost a large chunk of its business, is unlikely to prevent equally determined societies following the Abbey's path. A far greater obstacle is likely to be the market's appetite for building society paper. Despite the Abbey's expensive public relations effort, it is hard to see why it deserves to yield less than the prospective 7½ per cent offered by the UK bank sector. Less aggressive societies might feel that this is too high a price to pay just to escape from the BSC.

CGE

CGE may well be right that its "hard core" of friendly shareholders risks being plucked out at any moment by the Socialist government. The Socialists would no doubt dearly love to see the share register of CGE take on a different political colour; and as they saw no need to play fair over Société Générale, CGE could be forgiven for fearing undue government interference in its own investor relations.

But if the Government has proved to have only a tenuous grasp of the principle of shareholders' democracy, CGE yesterday demonstrated a fondness for dictatorship *tout court*. If shareholders go along with this latest scheme for self-defence, they will find that they can buy as much of CGE as they like but can never control it. CGE may well argue that the 8 per cent limit is a level of takeover protection which is only normal in Continental Europe. But if Paris is to stake its claim as the premier Continental European bourse, it will not be by sinking to the level of its neighbours in the matter of takeover prevention. On a day when Britain saw its biggest snack manufacturer fall under French control, CGE could scarcely have done less to promote the image of a level playing field.

Gateway

With Gateway's last defence document out of the way – curiously muffled, as its argument has been throughout – the choice is between an Isosceles victory and a counter-offer. A buy-out from Mr Monk faces one central difficulty. Isosceles aims to relieve its debt burden immediately with asset sales. Mr Monk could not do the same without tacitly admitting the flaws in Gateway's structure which lie at the heart of the opposition case. Meanwhile, a European or US white knight would be gambling on a quite unprecedented scale on the future of trans-national retailing. The odds must be on Isosceles after all.

New Zealand

The New Zealand economy has its problems, but these cannot excuse the massive losses reported by Bank of New Zealand, the country's biggest bank. Last year it lost NZ$634m, which is more than it made in the previous six years, and if it were not largely owned by the New Zealand Government it would be bust. It has passed its final dividend; and minority shareholders, who paid NZ$1.75 a share only two years ago when it came to the market, are now being asked to fork out another 70 cents a share to finance a rights issue at a substantial premium to net asset value in order to repair the bank's capital ratios.

It is hard to understand how a bank with such a distinguished record can come to have backed so many failed entrepreneurs in the region in such a big way. Meanwhile, its troubles do not reflect particularly well on Sir Ron Brierley's investment skills. As an ex-chairman, he offered to buy the bank for substantially more than it is now worth. He must be eternally grateful that he was turned down.

Spain to take peseta into EMS exchange rate mechanism

By Peter Bruce in Madrid

SPAIN yesterday announced plans to take the peseta into the exchange rate mechanism of the European Monetary System before July 1 next year, ending a long debate about the merits of full EMS integration.

The pledge, by Mr Carlos Solchaga, the Finance Minister, will enhance the credibility of the Spanish Government as it chairs a European Community summit later this month aimed at boosting European monetary integration.

Mr Solchaga said the deadline was intended to coincide with the implementation of phase one of the timetable as mapped out in the report of the committee on monetary union chaired by Mr Jacques Delors, European Commission president.

That report urges full participation in the EMS by Britain, Spain, Portugal and Greece – the only EC members which have held back from full membership – as an initial step towards integration.

Mr Solchaga, in a remark clearly aimed at Britain, said: "We firmly believe all EC members must join the exchange rate mechanism of the EMS."

The minister added that for monetary union to work, economic policies throughout the EC would need to be harmonised. He added: "The establishment of an economic area in which goods, services and capital can freely move will bring about such pressures on the exchange rate, that, without strong economic policy co-ordination, this instability of the exchange rates will seriously damage the sustainability of the economic union."

He added that all EC countries should become full EMS members before the Commission's directive on free capital movements is legally enforced.

The Spanish minister said afterwards that Spain would negotiate a fluctuation band of 6 per cent against other EMS currencies for the peseta – as applies to the Italian lira

Mr Solchaga's announcement comes just days after the Bank of Spain renewed calls for full membership of the EMS in order to make it more difficult for the Madrid Government to resort to purely monetary measures to combat rising inflation.

WORLD WEATHER

		°C	°F			°C	°F			°C	°F			°C	°F
Ajaccio	S	21	70	Dubrovnik	R	18	64	Malta	S	22	72	Rhodes	C	29	84
Algiers	S	28	79	Edinburgh	C	8	46	Manchester	C	13	55	Rio de J'o	F	28	82
Amsterdam	C	14	57	Faro	S	20	68	Manila	C	35	95	Rome	S	22	72
Athens	C	28	82	Florence	F	22	72	Melbourne	C	12	54	Salzburg	C	12	54
Bahrain	S	35	95	Frankfurt	F	15	59	Mexico City	F	29	84	San Francisco	F	13	55
Bangkok	F	33	91	Funchal	C	20	68	Miami		–	–	Seoul	S	26	79
Barcelona	F	17	63	Geneva	C	16	61	Milan	S	19	66	Singapore	S	30	86
Beirut		–	–	Gibraltar	F	22	72	Montreal	S	13	55	Stockholm	F	19	66
Belfast	F	13	55	Glasgow	C	13	55	Moscow	C	22	72	Strasbourg	F	17	63
Belgrade	C	18	64	Guernsey	F	13	55	Munich	R	11	52	Sydney	F	15	59
Berlin	C	13	56	Helsinki	R	18	64	Nairobi	F	21	70	Taipei	F	35	95
Biarritz	C	13	55	H. Kong	F	29	84	Naples	F	23	73	Tangier	F	22	72
Bombay	F	33	91	Innsbruck	C	12	54	Nassau	F	30	87	Tel Aviv	S	29	84
Bordeaux	C	17	63	Inverness	C	11	52	New Delhi	C	26	79	Tenerife	F	22	72
Brussels	C	12	54	Islamabad	F	40	104	New York	C	18	64	Tokyo	F	28	82
Budapest	F	16	61	Istanbul	F	31	88	Nice	F	20	68	Toronto	S	14	57
B Aires	F	14	57	Jakarta	R	33	91	Nicosia	S	30	86	Tunis	F	25	77
Cairo	S	37	99	Jersey	F	13	55	Oporto	S	20	68	Valencia	S	22	72
Cape Town	S	21	70	Jo'burg	F	13	55	Oslo	C	15	59	Venice	C	20	68
Caracas	C	28	82	Lima	C	19	66	Paris	C	13	55	Vienna	S	17	63
Casablanca	F	21	70	Lisbon	S	21	70	Peking	R	20	68	Warsaw	C	20	68
Chicago	F	19	66	London	C	12	54	Prague	F	14	57	Washington	C	22	72
Cologne	F	15	59	Los Angeles	S	14	57	Reykjavik	C	7	45	Zurich	C	14	57
Copenhagen	F	11	52	Luxembourg	C	13	55								
Corfu	F	23	73	Madrid	S	21	70								
Dallas		–	–	Majorca	S	24	75								
Dublin	F	14	57	Malaga	S	27	81								

Readings at mid-day yesterday

C-Cloudy Dr-Drizzle F-Fair Fg-Fog H-Hail R-Rain S-Sun Sl-Sleet Sn-Snow T-Thunder

Solidarity seeks new discussions

Continued from Page 1

Communist and allied parties who were each required to win 50 per cent plus one of the valid national vote to enter Parliament.

Mr Geremek said Solidarity stood by its word that 65 per cent of the seats in the Sejm would be filled by the official side, implying that the authorities had the go-ahead to find a legal way of filling the remaining seats.

That, however, will not be easy because the election rules provide no formula

Airbus to develop 'stretched' A-320

By Paul Betts in Paris

AIRBUS INDUSTRIE, the European airliner consortium, is to develop a stretched version of its A-320 medium range, 150 seat, twin-jet aircraft.

Mr Henri Martre, chairman of Aerospatiale, the French partner in Airbus, confirmed yesterday that the consortium would develop a 180 to 200 seat aircraft to be called the A-321-100.

The version, which is expected to be formally launched in the autumn, will compete with Boeing's 757-200 medium range aircraft.

The A-321-100 will also fill a gap in the Airbus aircraft range and will provide the group with a product that is in great demand in the commercial aircraft market.

Airbus expects to win 40 orders for the aircraft this year.

Overall, Airbus expects that the stretched version will increase sales of the A-320 family by 300 to 400 aircraft to between 1,300 and 1,400 in the next 20 years.

Aerospatiale said that Airbus expected to deliver 107 aircraft this year, compared with only 60 last year.

Deliveries by the European consortium should increase to 134 aircraft next year, to 136 in 1991 and steadily up to 200 in 1994.

The French partner said Airbus A-320 production of six aircraft a month would be increased to seven by the end of this year and reach a monthly rate of eight by next June.

A-320 production projected for the end of 1991 is 10 aircraft a month.

Aerospatiale also announced an industrial co-operation agreement with several European partners to study a new military transport aircraft to replace the Transall and Hercules transport aircraft.

The agreement includes Aerospatiale, British Aerospace, Aeritalia, MBB of West Germany and Casa of Spain which have formed a grouping called Euroflag (European Future Large Aircraft Group) to work on a new military transport aircraft.

Euroflag will replace the Fima (Future International Military Aircraft) association, which included Lockheed of the US. Casa has replaced the US concern in the new European grouping.

Mr Martre said, however, that Euroflag would consider co-operating with an American partner.

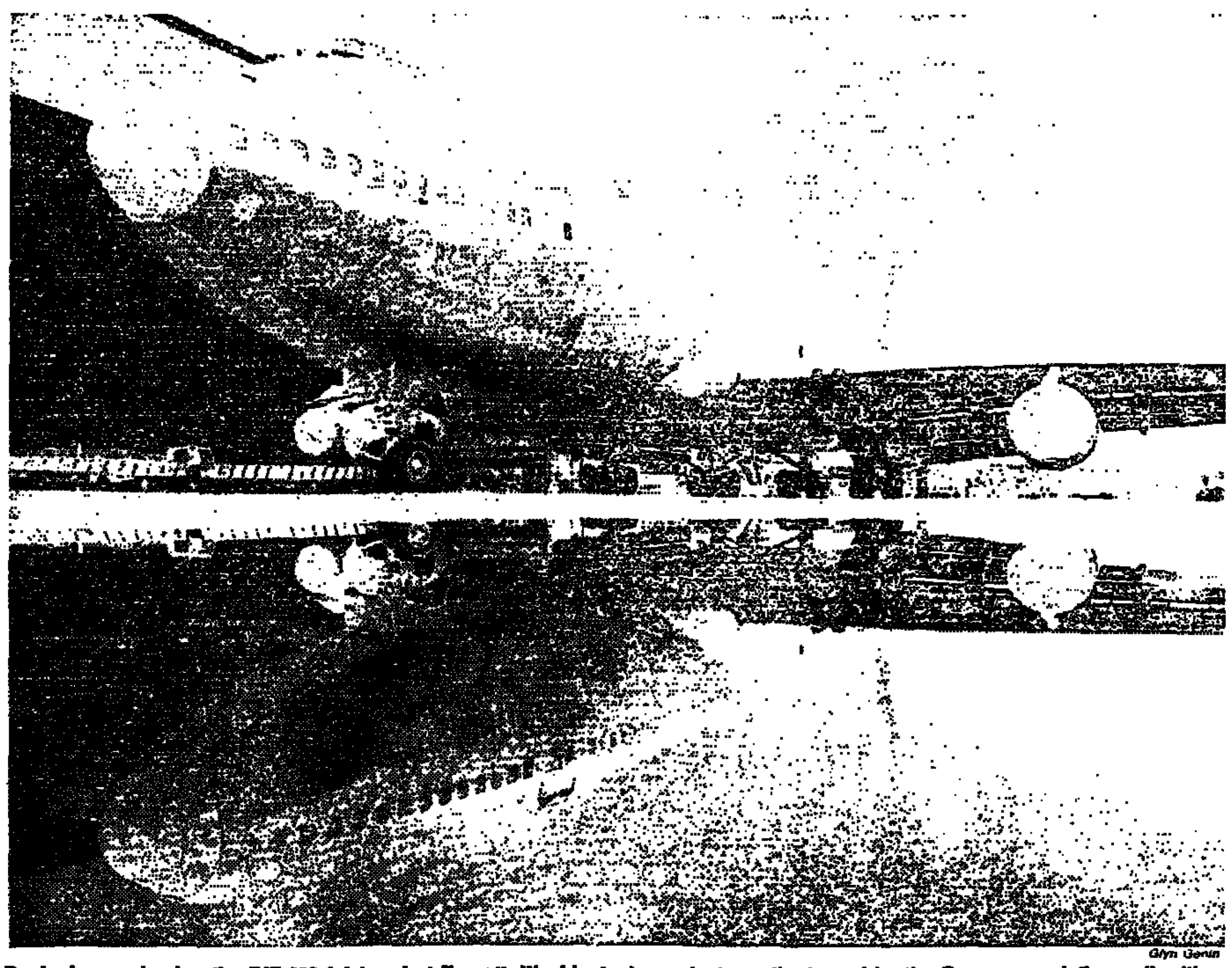
He suggested that the European group wanted to keep its options open in the choice of a US partner.

In a further development, Aerospatiale disclosed that it had linked up, in a consortium called Eurosam, with the Italian Selenia group and the French Thomson CSF defence and electronics concern to develop a family of anti-aircraft defence systems.

SECTION III

FINANCIAL TIMES SURVEY

With order books at unprecedentedly high levels, and with much new business continuing to flow in, especially in commercial aircraft, the most significant single task ahead, says Michael Donne, is to raise the volume of production without sacrificing quality.



Glyn Genin

Boeing's new jumbo, the 747-400 (pictured at Everett, Washington) was last month cleared by the European aviation authorities

AEROSPACE

PART ONE

CONTENTS

PART ONE

PART TWO

Optimism at new heights

THE world's aerospace industries go to the Paris International Air Show with order books fuller than ever before, and an optimistic view of business through to the end of the century.

The mood spans the entire spectrum of civil and military aircraft and engines, equipment (including avionics), missiles and spacecraft.

In military aviation, despite cuts in some defence budgets, there is still substantial spending on aircraft and associated weapons systems of all kinds, including tactical combat aircraft. Several important projects are under development, including the French Dassault Rafale and the Anglo-German-Italian-Spanish European Fighter Aircraft (EFA).

Other countries are making massive purchases of aircraft and associated weapons systems. One example is the recent Saudi Arabian weapons deal with the UK, Al Yamamah II, believed initially to be worth some £35bn, but ultimately perhaps as much as £150bn. It provides for eventual maintenance of the equipment in service over many years, including Tornado and Hawk fighters, Westland helicopters, new air bases and other systems.

In the commercial aviation sector, the continued high demand, which added more than 1,000 new jet airliners to the manufacturers' order books last year, has continued into the first half of the current year. It shows no signs of falling off, as more and more airlines replace their existing fleets of "geriatric" jets and buy additional aircraft to cope with the anticipated growth of traffic through into the mid 1990s.

One result of this is that Boeing, the world's biggest builder of jet airliners, has revised significantly upwards its forecast of demand for new airliners through to early next century.

Boeing now believes that, over the next 15 years, a total of 8,417 new jets, of all types from all manufacturers, will be added to the world fleet — worth about $516bn, compared with its forecast of only a year ago of some 6,908 new jets, worth $414bn.

Of the overall Boeing figure, a substantial element will be accounted for by the replacement of existing ageing and fuel-inefficient fleets; but by far the greatest part of the $516bn will represent aircraft purchases to meet traffic growth.

This forecast is broadly in line with those of other major jet airliner manufacturers; and, as a result, they are all either planning to increase, or are already increasing, their production rates to meet the expected demand.

There is continued interest in the development of new airliners for the long-term future. Major new ventures now under development for entry into service in the early 1990s include the European A-330 twin-engined wide-bodied short-to-medium range jet airliner, and its long-range four-engined stablemate, the A-340, both using a common wing and many common systems and equipment.

In the US, McDonnell Douglas is well advanced in developing its new medium-to-long range tri-jet, the MD-11, which will be extended into a "family" of airliners for a wide range of tasks. But it is likely that even bigger derivatives of these aircraft will emerge before the end of the century, to meet the growing airline pressures for greater passenger capacities in the face of increasing airport and air-traffic control congestion.

The day of the 500-plus seater Boeing 747 Jumbo jet, for example, is thus a real possibility — Boeing is confident that, given adequate airline demand, it could build such an aircraft, with a new wing design and accompanied by the higher-thrust engines already emerging.

The other major jet builders, Airbus and McDonnell Douglas, are already also thinking of even bigger derivatives of their A-330 medium-range, A-340 long-range and MD-11 medium-to-long range airliners, even before any of the existing models have entered service.

In the aero-engine field, the manufacturers are already moving to meet that potential demand, and the era of the 65,000 lbs thrust engine has already emerged, with the prospect of thrusts of 80,000 lbs eventually attainable.

But at the same time, there is a slow but increasing interest in the development of the revolutionary fuel-efficient "prop-fan" or "unducted fan" engines, and it seems likely that much more will be heard of these ventures through the decade ahead.

McDonnell Douglas is now developing its ideas for the MD-90 series of prop-fan powered airliners, and is canvassing for orders worldwide, although so far no airline has taken the plunge. But it seems likely that, before the end of this year, some airlines, especially in the US, will decide that the risk is worth taking.

While the world aerospace industry is undergoing this considerable expansion, however, it is also facing some serious problems. Many of these stem from continued weakness of the dollar, which puts pressure on those companies based outside the US (such as British Aerospace and Rolls-Royce), whose manufacturing costs are based on other currencies but who also sell extensively into the US.

To some extent, these pressures can be relieved by a relentless drive to improve productive efficiency and bring down manufacturing costs, through the introduction of new techniques and new materials, especially at a time when technology itself is pushing its frontiers farther out into hitherto the unknown.

Such restructuring operations, to get costs down further, will be essential to the success of the aerospace industry in the 1990s. In the US, aerospace companies have already achieved savings in this way of 20 to 25 per cent of production costs.

The sources of such savings include: accurate product designs and reduced engineering activities; reduced tooling costs, and fewer start-up procedures for new products; better application of advanced technologies in materials and manufacturing techniques; improved responsiveness to market change; fewer disruptions; improved productivity; and reduced shortages of parts from suppliers.

Over recent years, both British Aerospace and Rolls-Royce have achieved considerable reductions in their manufacturing and inventory costs. Rolls-Royce, for example, says it has now achieved the "12-months engine" — meaning that, whereas a few years ago it took 18 months to build an engine, today it can be done in one year.

To some extent, this problem of the rising costs of new ventures has already been met by the growth of international collaboration. While, in general terms, this can be expected to result in wider markets and reduced cost-burdens on individual companies, the fact is that some groups have yet to deliver the cost-savings originally hoped for.

The European Airbus Industrie consortium is an example. Although, in recent weeks, it has scored a series of spectacular triumphs in overseas markets, with big orders for its new A-330 twin-jet from Trans World Airlines of the US and Cathay Pacific of Hong Kong, it has been criticised by its member-governments over its lack of financial accountability. As a result, the group's top management has recently been restructured, to improve financial control; and it is hoped that this will eventually result in profitability.

But, as well as generating international collaboration, these same pressures are resulting in an intensification of competition across the whole spectrum of activities — in civil and military airframes and engines, avionics and other equipment, as well as in spacecraft — as individual companies or consortia seek to expand their market shares.

But dominating the entire aerospace industry is the thought of what is likely to happen after the end of 1992, when the Single Market is due to become effective throughout the European Community.

Some observers in the US industry have voiced the fear that the single market may generate a feeling of protectionism throughout the European industry.

Mr Frank Shrontz, president of Boeing, indicated this concern at a meeting in Brussels when he suggested that "the American impression is that there is a growing attitude in Europe to buy European wherever possible, if necessary at a premium."

This view, however, has been rejected equally vigorously by Sir Raymond Lygo, chief executive of British Aerospace. He has stressed that, while there is undoubtedly competition for defence orders, with too many companies chasing too few orders, it is too much of an international two-way street, with so many international collaborative ventures either in place or programmed, for any kind of "fortress Europe" situation to emerge.

THE AIRLINER MARKET: more passenger traffic is good for order-books, reports Michael Donne

Replacements help the spree take off

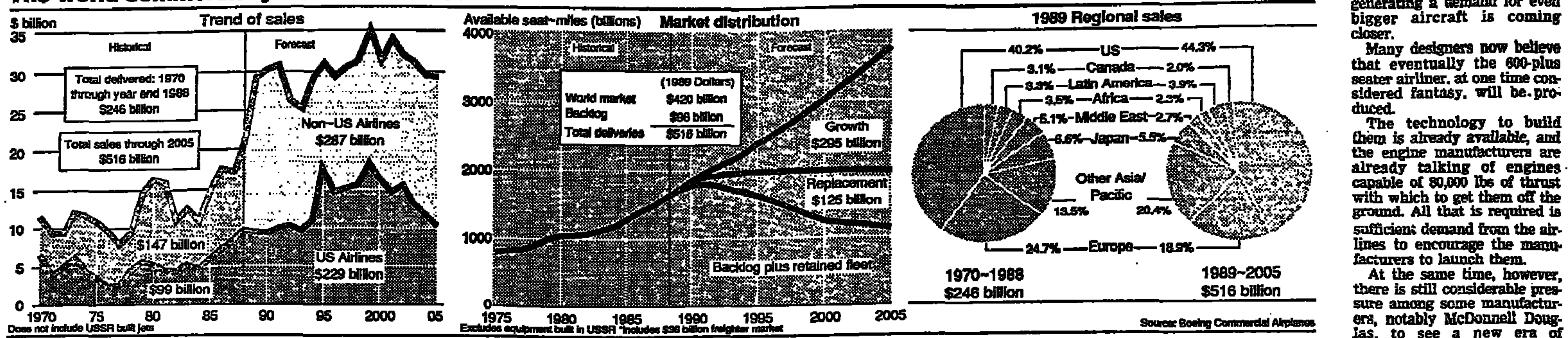
MANUFACTURERS of jet and turbo-propeller airliners all over the world are busier than ever as a result of a flood of orders in recent months, and all are either already increasing production rates or are expected to do so to meet unprecedented demand.

Last year, more than 1,000 new jet airliners were ordered by the world's airlines, at a cost of $47.47bn (£27.8bn), in addition to several hundred new turbo-propeller types – the highest annual inflow of new orders ever recorded, and well above the previous year's level of 726 new jets worth $39bn.

The main reason was the big increase in world passenger traffic over recent years, to nearly 1.1bn on scheduled services alone in 1988. Although that was only some 4 per cent more than in the previous year, it masked the fact that in some regions of the world, such as the Far East and south-east Asia, the growth was around 20 per cent, and that in other areas, such as western Europe, it was running at more than 10 per cent.

Although such high rates are expected to slacken a little in the near future, overall air traffic growth is expected to continue, according to most observers, at a rate of between five and seven per cent a year through the 1990s, with the result that world scheduled air passenger numbers will double to more than 2bn a year by the end of the century.

The world commercial jet airliner market



Source: Boeing Commercial Airplanes

But another important contributor to the demand for new jets has been the emergence of the long-awaited "replacement" buying spree among many of the world's airlines. Many airlines, influenced by the stability of aviation fuel prices, had been keeping many of the older types of jets flying – such as early Boeing 727s and 737s, British One-Elevens and McDonnell Douglas DC-9s.

The rising cost of maintaining those aircraft, however, together with the increasingly stringent environmental regulations against aircraft noise, especially in North America and Western Europe, together with the emergence in recent months of growing public concern about the safety of some of those older models, has stimulated the airlines to start replacing them.

Yet another factor behind the upsurge in demand has been the increasing desire by many airlines to move into larger aircraft, so as to cope with growing congestion at airports and along the air routes.

In many parts of the world, but especially in North America and western Europe, such congestion is now a serious and growing problem, leading to long delays during peak periods at major hub airports. Airport take-off "slots" have become precious, and the demand for bigger aircraft that can carry more passengers per flight is now increasing.

All these factors have led Boeing, the world's biggest manufacturer of jet airliners, substantially to increase its forecasts of world jet deliveries up to the year 2005.

Boeing is now forecasting that over that 15-year period, a total of 8,417 jet airliners of all types from all manufacturers will be delivered, instead of the 6,908 it was forecasting a year ago, an increase of 1,509. The value of these aircraft is put at $516bn, including the $96bn of new jets already on the order books, against the previous estimate of $414bn.

Boeing believes the growth in world air travel will be prolonged into the 1990s, driven by continued growth in discretionary income, accompanied by a decrease in the real cost of travel, after allowing for inflation. The company is also predicting that fuel prices will continue to be relatively stable, and that there will be no economic recession for the foreseeable future.

About 70 per cent of all the anticipated new aircraft will be

Many designers now believe the 600-plus seater will be built

bought to meet the growth in traffic, says Boeing, while most of the rest – that is, apart from a small number to meet cargo growth needs – will be to meet the replacement market.

Most other manufacturers broadly share the Boeing view, and as a result, like Boeing, are putting up production rates to meet the immediate demand.

At the same time, several are developing airliners that will not only be able to carry more passengers but also carry them further non-stop than in the past.

In western Europe, for example, Airbus Industrie is now well into the development of its short-to-medium range 300-plus seat A-330 airliner, along with its partner, the four-engined, long-range A-340, both of which are due to enter service in the early 1990s.

In the US, as a direct challenge to the Boeing monopoly of the long-range jet market in the shape of the Jumbo 747-400, McDonnell Douglas is developing its new three-engined MD-11 airliner.

At the lower end of the market, however, despite the pressures for larger airliners of 200 seats and upwards by some airlines, which is bringing significantly increased sales to Boeing with the twin-engined 757 and the bigger 767, there also continues to be a strong demand for aircraft in the broad 100 to 150 seater market, with such types as the Airbus A-320, the British Aerospace 146-300, the Boeing 737 family of jets and the McDonnell Douglas MD-80 series all doing well.

While some of these – the A-330, MD-11 and 747-400, for example – are bigger than any airliners yet seen, the likelihood of air traffic congestion generating a demand for even bigger aircraft is coming closer.

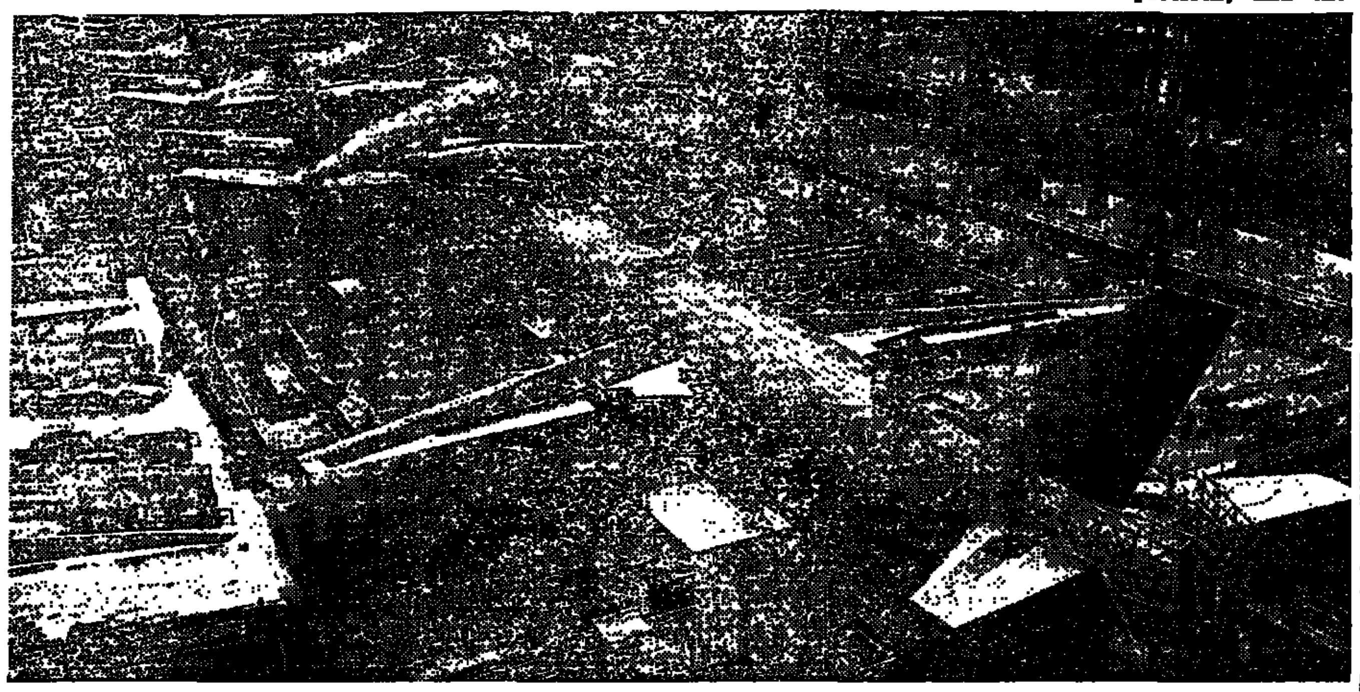
Many designers now believe that eventually the 600-plus seater airliner, at one time considered fantasy, will be produced.

The technology to build them is already available, and the engine manufacturers are already talking of engines capable of 80,000 lbs of thrust with which to get them off the ground. All that is required is sufficient demand from the airlines to encourage the manufacturers to launch them.

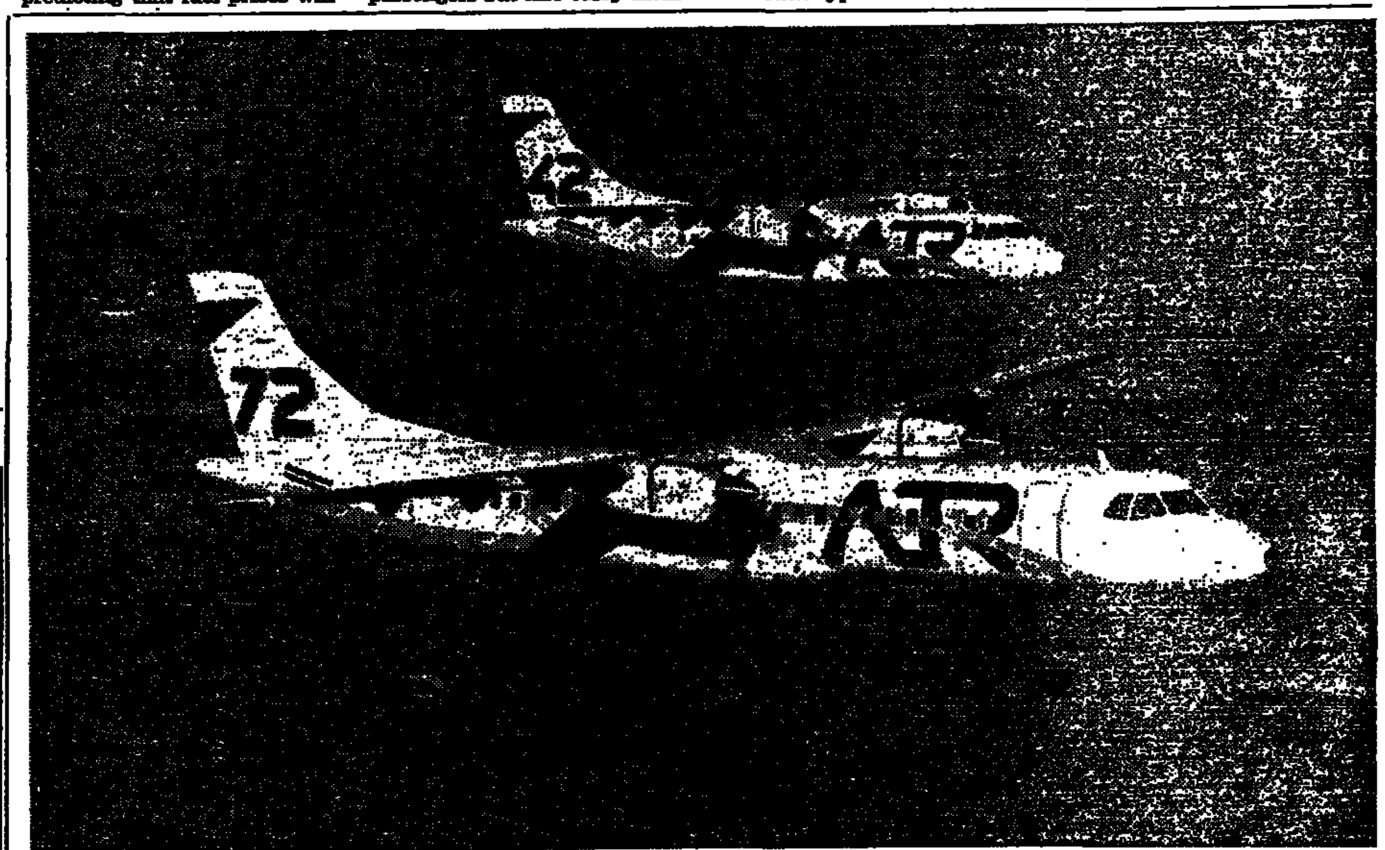
At the same time, however, there is still considerable pressure among some manufacturers, notably McDonnell Douglas, to see a new era of short-range jet airliners emerging powered by the revolutionary new "prop-fan" engines, which offer substantial savings in fuel consumption over jet engines, whilst driving the aircraft at near jet speeds.

McDonnell Douglas is continuing its research into the MD-91 and 92 series of twin-engined airliners using prop-fan engines, in conjunction with General Electric/Snecma and Pratt & Whitney/Allison, and is offering the airlines such short-to-medium range aircraft for the mid-1990s and beyond.

So far, no airlines have picked up such offers, but interest is steadily growing, and the first orders for such new types may be closer than many believe. The forthcoming Paris Air Show will offer McDonnell Douglas and the engine builders a major opportunity to update the world's aerospace community and the world's airlines on where those programmes now stand.



Demand for airliners of 200 seats and upward is increasing sale of Boeing 757s, seen being assembled at Renton, Washington



The ATR-42 has between 46 and 50 seats. The ATR-72 stretched version, which first flew last October, can take up to 74

REGIONAL BUILDERS

Small bodies, large orders

WHILE big orders for large, wide-bodied jet airliners continue to make the headlines, with many airlines seeking bigger aircraft to help combat the problems of airport and air route congestion, there remains a large and growing market for smaller airliners, for the myriad short-haul routes that are developing worldwide.

For the fact is that, whilst air traffic congestion may be serious in the major countries of Western Europe and in the US, threatening the expansion of regional air transport operations at some major airports, there are still many parts of the world where there is still plenty of room for continued air transport growth, and where smaller aircraft that are cheap to buy and fly are in considerable demand.

This is especially the case in many of the under-developed regions of the world – Latin America, Central America, Africa, the Middle East, and large parts of the Far East and South-East Asia.

In those areas, air transport is essentially based not upon the Jumbo jet or the Airbus, but upon the vast array of smaller, twin-engined turbo-propeller types of aircraft, specifically designed for the short-haul regional air trravel market, seating anything from a dozen up to 100 passengers at a time.

These are mostly turbo-propeller types (for quiet and low-cost operation). In the 19-seater category there are the British Aerospace Jetstream 31, US Beech 1900, West German Dornier Do-228, US Fairchild Metro and Brazilian Embraer/Fama CBA-123.

In the 30-40 seater category there are the de Havilland Canada Dash 8-100, the British Shorts 360, the Swedish Saab 340, the Embraer EMB-120 and the Dornier Do-328.

The 40-60 seat category includes the Saab 2000, de Havilland Canada Dash 8-300, Dutch Fokker 50 and the Franco-Italian Avions de Transport Regional ATR-42.

In the 80-100 seat category there are the ATR-72 and the British Aerospace Advanced Turbo-prop (ATP).

All these are turbo-propeller powered, but there are two types of jet airliner also in the regional market – the British Aerospace four-engined Type 146 available in three versions from about 80 to 112 seats, and the Dutch Fokker F-100 seating between 97 and 119 passengers a time.

All the major manufacturers remain confident that their aircraft will be in demand, and are geared to high production through the 1990s

The manufacturers of all these aircraft last year recorded strong growth, with orders for over 600 aircraft added to the books, and at least another 60 on option. After allowing for deliveries, the backlog of outstanding orders at the end of the year amounted to some 860 aircraft.

While some of these were sold for corporate business and executive use, the majority of them were bought by small airlines building up their local service and commuter-tyupe operations, either linking small communities directly or serving as links between smaller communities and larger "hub" airports.

These types of operation are expected to continue. Even in the air transport-saturated areas of Western Europe and the US, where congestion has lead to pressures against smaller aircraft at many major airports, there is still room for a substantial volume of such commuter and regional style operations at the smaller airports.

Furthermore, in the 1990s, as the effects of greater air transport de-regulation and liberalisation begin to be felt throughout the European Community (with an inevitable overspill into the countries outside the Community), the volume of intra-regional traffic will grow, air traffic congestion notwithstanding.

As a result, all the major manufacturers remain confident that their aircraft will be in demand, and they are geared to continued high production through the 1990s.

This confidence is illustrated by the interest being shown in the possibility of developing jet-powered regional airliners by two major manufacturers, Short Brothers of the UK and the Canadian company, Canadair, which is owned by a bigger transport vehicle conglomerate, Bombardier (the other major Canadian manufacturer is de Havilland Aircraft, owned by Boeing of the US).

This would be a quantum jump that could have far-reaching effects on all the manufacturers who have so far concentrated solely upon turbo-propeller types.

Bombardier, the Canadian transport conglomerate which now owns Canadair, recently said that it intended to go ahead with its plans to develop its New Regional Jet airliner (NRJ), a $231m (£134m) project for a 50-passenger twin-engined short-to-medium range aircraft essentially for regional airliner markets.

Bombardier says it has already logged firm orders for 56 aircraft with options on at least another six, enough to justify the start-up decision. The company foresees a market for up to 1,000 of such aircraft through the next decade or so. The NRJ, costing between US $14m and 15m a time, will have a range of 1,700 miles, a speed of 530mph and US engines, with first deliveries due in the second quarter of 1992.

This aircraft will be competing with the projected Short Brothers FJX, also a short-to-medium range 50-seat twin-engined jet, now being designed and discussed with operators world-wide, but with so far no formal commitment to develop it.

The big outstanding question is what will happen to these ventures if Bombardier succeeds in its current bid to buy Short Brothers, which has been put up for sale by the UK Government.

Clearly there can be no question of both new aircraft being developed by one organisation. The general belief is that if Bombardier gains Short Brothers, the FJX would be shelved, if not cancelled, with the best elements of it being incorporated into the NRJ, and with a considerable part of the Short Brothers design team being brought into the Canadian venture. In such a way, the aircraft development side of Short Brothers would be retained, and there would be a clear field for the NRJ to dominate world markets for small regional jet airliners.

Michael Donne

Michael Donne finds the engine market working at full-throttle

Congestion fuels demand

IN COMMON with the airframe manufacturers, the major world aero-engine builders are trying to expand production to meet increasing demand from the world's airlines for new aircraft.

Although manufacturers' estimates vary between $50bn and $75bn for the market in new commercial aero-engines between now and the end of the century, all agree it will be massive.

Pratt & Whitney of the US, for example, estimates that between now and 1998, the market will amount to some $50bn, covering about 4,800 new aircraft, or some 13,000 new engines.

It estimates that of those engines, about 32 per cent by value will be for engines under 30,000 lbs thrust, for such short-to-medium range aircraft as Boeing 737s, McDonnell Douglas MD-80 series and Airbus A-320s, together with derivatives.

About 14 per cent will be in the 30,000 to 45,000 lbs thrust category for such medium-to-long range aircraft as the Boeing 757, and the Airbus A-340.

The remaining 54 per cent will be in the expensive "very high thrust" category of engines of over 45,000 lbs thrust, covering such aircraft as the Boeing 747 Jumbo, the 767 twin-jet, the McDonnell Douglas MD-11 long-range tri-jet airliner, and such medium-range aircraft as the new high-density seater Airbus A-330 twin-jet.

Rolls-Royce's estimate of the world commercial engine market is rather higher, at about $85bn through to the year 2003, but it broadly agrees with the Pratt & Whitney view that in terms of value the most lucrative area will be the very high thrust engines.

But whatever the type or size of aircraft, there is an increasing demand for reliable, fuel-efficient engines which are environmentally acceptable in terms of noise and pollution.

As a result, the engine builders' own production lines are being accelerated, and the search for improvements in performance with lower development and production costs is intensifying.

This is largely due to the keen competition that is developing between the major engine manufacturers for a share of the growing markets.

A multi-billion dollar contract for an airframe and engine can be won or lost on just a fraction of one per cent difference in engine operating costs, which can add up to millions of dollars throughout the lifetime of an engine.

This is especially so at the "big thrust" end of the world market for aero-engines, where power ratings are being pushed higher and higher to meet the airlines' and manufacturers' demands for bigger aircraft, to enable them in turn to cope with rising passenger and cargo traffic as well as with increasing congestion at airports.

Even as recently as the early to mid-1980s, the possibility that engines of thrusts in excess of 60,000 lbs would be required had been considered unlikely. But the situation has changed dramatically as a result of the increased congestion, especially at peak periods.

Whatever the type or size of aircraft, there is an increasing demand for reliable, fuel-efficient engines which are environmentally acceptable in terms of noise and pollution

The congestion is likely to remain for the forseeable future, but it has already generated a demand for engines in the 65,000-plus thrust class, with the capability of going further to as much as 70,000 lbs.

But Rolls-Royce, for example, which currently has about 20 per cent of the world market for civil jet engines and believes that a share of 30 per cent is within its grasp in the next few years, suggests that the end is not yet in sight, and that thrusts of 75,000 lbs are inevitable, with the possibility of going to 80,000 lbs.

Rolls-Royce's own latest high-thrust derivative of the RB-211-524 engine, the model L, could be taken up to 80,000 lbs thrust if needed.

So far, Rolls-Royce appears to be in front of its rivals with this version of the RB-211-524, which, together with the H model of the engine at a slightly lower thrust, it is developing from its own financial resources.

Originally, the company had applied to the UK Government for launch aid of up to about a third of the estimated £300m development cost, but now considers it will be able to cover the costs from its own resources and from risk and revenue sharing partners, including such Japanese aero-engine companies as Kawasaki Heavy Industries and Ishikawajima-Harima Heavy Industries, which together have a 10 per cent share in the RB-211-524 engine.

But it can only be a matter of time before General Electric, with the CF6-80C2, and Pratt & Whitney with its PW-4000 series, catch up, and already the battle for sales has begun, with Rolls-Royce winning launch orders for the L engine from Air Europe in a fleet of McDonnell Douglas MD-11 tri-jets, and in A-330s for Cathay Pacific Airways of Hong Kong. Negotiations with Airbus, Boeing and Douglas, as well as with many other airlines, are expected to result in further orders for the L engine soon.

Primarily, engines of this size are required to power the new, higher-weight aircraft now under development, such as the Airbus A-330 and McDonnell Douglas MD-11 three-engined long-range airliner, both due for delivery in the early 1990s, as well as possible future versions of the Boeing 747 Jumbo jet beyond the current Series 400 model.

Because of the pressures on airports and air traffic control facilities, as air traffic overall continues to expand, and because also of the growing demand for non-stop long-distance air travel, it seems likely that "stretched" versions of all these and other types of aircraft will emerge in the years ahead, requiring the bigger-thrust engines.

Some observers believe the eventual development of 500-600 seater A-330s, MD-11s or 747s is not only possible, but probable, driving the engine builders to even higher thrusts to lift such monsters off the ground, whilst maintaining lower fuel consumption and reduced pollution emissions.

Behind these developments, however, all the major manufacturers are looking even further ahead, with ideas for new types of engines, such as "unducted" or "unducted fans" that will be capable of improving thrusts, saving on fuel and further reducing noise and atmospheric pollution.

The most recent developments in this field have come from General Electric of the US and a joint venture by Pratt & Whitney and Allison Division of General Motors, also of the US, with what are called "prop-fans", in which the gases generated are used to drive "propulsors", which look more like ships' screws than the conventional propellers of today, in what are called "unducted fan" engines.

The results are engines giving near-jet speeds with savings in fuel consumption varying between 25 and 40 per cent when compared with the current generations of turbofan jet engines.

How long it will take before such power-plants are developed in quantity depends primarily upon the trend in fuel prices. If prices remain stable, there will be little incentive for engine manufacturers to spend vast sums on developing such new power-plants, or for airlines to buy them. A significant jump in fuel costs, for whatever reason, however, would lead to accelerated development of these new engines.

Looking even further ahead, Rolls-Royce believes current advances in aero-engine technology could make it possible to develop a successor to the Concorde supersonic airliner that will be fully competitive with subsonic aircraft over long distances.

The company is conducting studies into such propulsion systems. Improvements in aerodynamics, engine performance and composite materials in the 20 years since the original Concorde's Olympus 593 engines were developed, plus further developments now taking place, including the extensive use of ceramics, could result in an engine far more efficient than the Olympus — probably a "variable cycle" engine that could be adjusted to provide quiet take-off and economic operation at both subsonic and supersonic speeds.

HELICOPTERS: what was Westland all about?

An alliance is logical

FOR NO very obvious reason, British media and politicians have been raking over the coals of the Westland affair of three years ago.

The interesting question, in retrospect, apart from the circumstances in which two Cabinet ministers resigned, is what the affair really amounted to.

If the problem was about over-capacity and the over-supply of helicopter companies in Europe, nothing has changed. Europe still has four helicopter manufacturers (Westland, Messerschmitt-Bölkow-Blohm, Aerospatiale and Agusta) facing up to four in the US (Sikorsky, Boeing Helicopters, Bell Helicopter Textron, and McDonnell Douglas). More than that, another two European companies — Fokker, of the Netherlands, and Casa, of Spain — are trying to get their foot in the door.

If it was about the choice of Westland falling into US or European hands, neither happened. United Technologies of the US, parent of Sikorsky, took its stake, but Westland did not become a pariah in Europe; anyway, GKN of the UK has since stepped in as the dominant shareholder. And the nearest thing to a saviour was Saudi Arabia, which last year became the first customer for Westland's Sikorsky-licensed Black Hawk assault transport helicopter, helping to remedy a lean order patch.

And if it was about the structure of Westland, it is (although a respected manager from Plessey, Mr Alan Jones, has just been parachuted in as chief executive) much the same. As one senior civil servant commented: "If it was a good and brilliant structure, they would not have got into trouble, would they?"

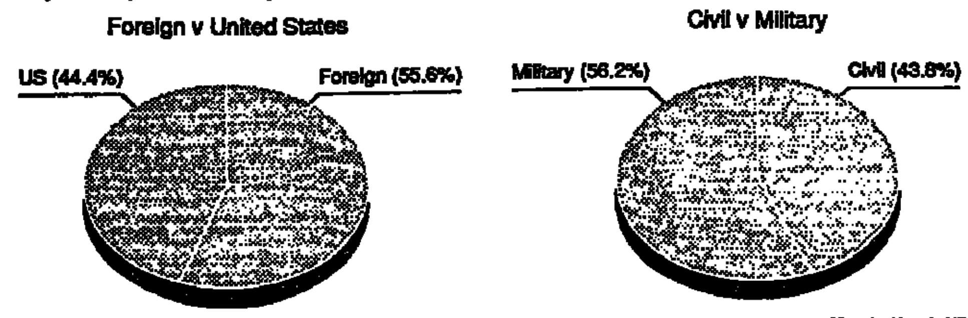
An alliance of one kind or another still seems to be the only logical way forward, but Europe has a confusion of alliances. It is 11 years since the UK, West Germany, France and Italy agreed to co-operate in helicopters. All are co-operating, but not necessarily with each other. In the UK's case, following a recent history of collaboration with France, the only active link now among the other three is with Italy.

France's state-owned Aérospatiale, which has been successful with its Ecureuil, Dauphin and Super Pumaaircraft, wants to link this side of its business with MBB'sin order to compete on more level footing with Sikorksy and Bell, and is anxious to draw Westland into Franco-German collaboration on battlefield helicopters.

The helicopter business is a notoriously hard furrow to plough. An estimated 44 per cent of the world market is in the US. The civil side is volatile, heavily dependent on the offshore oil market. It may now be improving, especially with higher oil prices; Westland is hopeful of North Sea orders for the Anglo-Italian EH101 utility helicopter. But demand for corporate uses remains slow.

World helicopter deliveries

Ten-year composite forecast (1988-1997): 11,700 aircraft



Source: Sikorsky Aircraft, USA

The military side accounts for more than half the business, but demand there is cyclical and uncertain in timing. The helicopter is a victim of its own robustness; it does not suffer from the same fatigue as a high-performance fighter; its replacement can easily be put back.

The most dramatic setback this year has been the announced cancellation by Washington of funds for the V-22 Osprey tilt-rotor project for the US Navy, an aircraft that takes off like a helicopter and swivels its rotors to fly like a turboprop.

However, it seems probable that the Bell/Boeing joint venture will be kept alive, at least with a trickle of development funds. The US Navy wants it to transport marines, and it seems unlikely that the US will vacate this revolutionary area of technology. A five-nation European team is studying a smaller civil tilt-rotor for the next century — the European Future Advanced Rotorcraft, or Eurofar, involving the four main producers and Casa of Spain — and is looking into possible military uses.

Decisions on UK military programmes are being held back as thinking evolves about airmobility and the role of helicopters in the battlefield. Lt Gen Sir David Ramsbotham, commander of the UK Field Army, admitted on an exercise a few months ago: "The Soviets are ahead of us in their concepts for, and employment of, helicopters, having acted while we have been thinking."

The UK pulled out in 1987 from the European NH-90 utility helicopter, preferring the idea of using the larger Anglo-Italian EH101 for the troop transport role. The three-engined EH101, a Westland/Agusta joint venture, is a combined naval, military and commercial programme.

The Ministry of Defence earmarked £1.6bn for the first 50 anti-submarine units for the Navy, but has been holding back production funds. For the RAF troop-carrying role, it has been having second thoughts about the EH101's suitability, possibly reconsidering the prospect of a UK requirement for the Black Hawk, and perhaps also regretting its decision on the NH-90.

As for battlefield helicopters, Britain, Italy, the Netherlands and Spain reached agreement in March, after some delay, to go ahead with a cost-definition study on the proposed Light Attack Helicopter, a beefed-up version of Agusta's A-129 Mangusta. But the project remains in some doubt.

Both the Dutch and the British are tempted by McDonnell Douglas's AH-64 Apache, which Westland would be in a position to assemble in the UK. British officials say they are still considering the Franco-German PAH-2 project, for which the French would gladly have Westland on board, as well. The UK is also taking a close look at the US LHX light attack and reconnaissance helicopter programme.

The $35bn LHX programme has been preserved intact in the US defence budget, at the expense of other helicopter procurement and upgrading plans. A McDonnell Douglas/Bell team is vying with Boeing/Sikorsky for full-scale development of the helicopter, due to complement the Apache and replace more than 3,000 "tactically obsolete" units in the US fleet.

Overall, small helicopters of under 15,000lb maximum gross weight are reckoned to make up more than two thirds of the potential military and civil market. McDonnell Douglas appears confident about the prospects for two light helicopters incorporating an anti-torque system, using air streams, that avoids the need for a tail rotor. This Notar system is claimed to make helicopters not only quieter but also safer and easier to fly. The first application of this is a new variant of the widely-sold MD520, a five-place, single engined model due to fly towards the end of the year. A development of what was originally an Army helicopter company, the OH-6 Cayuse, it may find a military as well as civil outlet.

A wholly new eight-place commercial helicopter, the MDX, using the same system, is due to fly in 1992. Hawker de Havilland, of Australia, became a partner in the programme in February. Like the new MD520N, the MDX is expected to have sales of some 800-1,000 over the next 15 years. It is described by the manufacturers as the first new commercial helicopter committed to production this decade.

David White

MILITARY AIRCRAFT: **David White** on the growing competition

Going solo costs too much

IT MUST be with some embarrassment that President François Mitterrand remembers the air show he opened at Le Bourget just after he was elected for his first term of office, eight years ago.

For his visit, all the visible weaponry on military aircraft had to be covered up or removed. Then, at further cost, it was all restored to public view.

No such squeamishness is in evidence these days. European and US manufacturers are shaping up for a fierce competition in export markets for the next generation of fighter aircraft. France, with a sales record that has lost much its former brilliance over the last few years, is in there with the rest, at a cost that bears witness to the difficulty, for any country but a superpower, of going it alone.

The price of solo efforts in high-performance combat aircraft has become exorbitant. Israel found that out when it was forced to cancel its Lavi *project two years ago after* some $1.9bn had been spent. Sweden has been finding it out, too, with its multi-role JAS-39 Gripen, a $6.5bn programme *dogged by delays and rising* costs. The first prototype of this light fly-by-wire fighter flew in December after about 18 months of holdups, and then *crashed in February.*

Like its European rivals, the project relies heavily on export hopes from the mid-1990s onwards.

The five European countries which originally decided to pool their efforts into one project are pressing ahead instead with two, as a result of *France's divorce from the others* four years ago: the Anglo-German-Italian Spanish-European Fighter Aircraft (EFA), projected at some $36bn (£22bn), *and the* Dassault-Bréguet Rafale, which it is reckoned could eventually cost a similar sum.

The twin-engined, single-seat Rafale *is designed as a highly* manoeuvrable and versatile fighter not much bigger than the Mirage 2000. The French Socialist Government, deciding that the plunge had already been taken, recently gave the go-ahead for a naval prototype as well. Also contending for the new generation of multi-role fighters is the Hornet 2000, the planned upgraded version of the McDonnell Douglas F/A-18. The US company campaigned strongly for a European partnership as an alternative to the EFA.

What would *have* been the other prime competitor, the *Agile Falcon*, successor to General Dynamics' F-16, was shot down by the latest proposed cuts in the US budget, but its death might not be permanent. The Netherlands, Denmark and Norway were committed in principle to joining the programme, while Belgium, which was with them in co-producing the F-16 in the 1970s, was still dithering.

Larger-winged and higher-powered than the F-16, geared primarily to the air superiority role, the aircraft was due for production from 1994-95. The *US Air Force is confident*, however, that its needs will be met by the Advanced Tactical Fighter (ATF).

The ATF, a replacement for *the McDonnell* Douglas F-15

With 770 delivered, the Tornado has assured sales of 1,000

from the mid-1990s, is a two-pronged programme, with prototypes built by Lockheed and Northrop expected to fly early next year. Selection for full-scale development is expected in mid-1991.

Besides the 700-aircraft, $64bn USAF programme, the US Navy is also evaluating the ATF to replace Grumman F-14 Tomcats, against an advanced Tomcat and the Hornet 2000. This is on top of its A-12 carrier-borne Advanced Tactical Aircraft programme, a General Dynamics-McDonnell *Douglas* joint venture to replace the Grumman A-6 Intruder.

The four-nation EFA went

The Tornado: its electronic combat and reconnaissance version

into full development last May, although the Spanish took *another six months before formally* jumping on board. Although the French have talked of finding common ground between the EFA and the Rafale, to *share costs, it* now appears too late for major bridges to be made between the two projects.

The first German EFA prototype is scheduled to fly in 1991, and the aircraft is due in service in 1996. After a nasty row, Bonn appears ready to accept a new Ferranti-designed radar – on a *project that already com*bines new airframe, new engine and new weapons – rather than an AEG-Marconi proposal based on proven technology *from Hughes of the US.* Failure to settle this key decision this summer would risk slippage in the whole programme.

The partners' confidence in the project is grounded on the Tornado. It involves the same participants in the main airframe and engine consortia, *plus the Spanish. The two* prime-contractor companies, Panavia and Eurofighter, and their respective management agencies all work in the same building in Munich, if not *always in happy cohabitation.* Panavia, the first company to be given full responsibility for a joint aircraft project, has 20 years' experience, managing a *sophisticated accounting and* work-allocation system.

With more than 770 aircraft delivered, the Tornado has assured sales of more than 1,000. The company *hopes* to keep supplying the aircraft up to 1996 and possibly, with new versions, to the end of the century. The problem for the partners *is how to dovetail the Tor*nado with the EFA, avoiding either a hole in production or a peak workload.

As an export product, the *Tornado, in its low-level pene*tration and air-defence versions, is either a success or not, depending on your viewpoint. It forms the backbone of *the UK's £15bn defence* agreement with Saudi Arabia, and the choice of Tornado by Malaysia is the first of several potential Asian orders, includ*ing Indonesia. But there is no* export outlet in Europe, and in the Middle East both Oman and Jordan have shelved their purchases – Oman going instead for British Aerospace Hawk trainer/fighters.

Differences about export policy have proved one of the main drawbacks of collaboration. Hold-ups in arranging finance for the Jordan sale, for which Bonn was unwilling to provide state backing, may be *held partly responsible for the* deal's failure. France's sale of Mirage 2000s to the same customer, by contrast, was already tied up.

The Tornado is now in the competition for a US defence-suppression aircraft to replace the F-4G. That would bring a US-made version, based on the electronic combat and reconnaissance Tornado developed for the German and Italian air forces.

*Following successful collabo*ration on the Harrier, studies are being funded by the US and UK governments on a supersonic Advanced Short Take-*Off/Vertical Landing fighter for* the next century.

The RAF's new GR5 version of the Harrier, a BAe-McDonnell Douglas joint venture, *differing only in details from the* US AV-8B, suffered a six-month delay after an accident in late 1987, but the first squadron is now due to become operational *this autumn. Basically* a bomber, with the role of attacking enemy follow-on forces before they get to the battlefield, the aircraft has *double the range of its GR3* predecessor, can take much more weight and is both more agile and, according to pilots, easier to fly.

The initial GR5s will be upgraded to the next GR7 version, with night operational capability. It is hoped the new Harriers, less limited in their weapons, will *sell* better abroad.

Europe can still claim to hold its own, or better, in some areas of military aircraft technology – aero-engines, aerodynamics, some electronic sensors. But in others the US lead appears to be absolute, among them stealth technology.

The existence of the Lockheed F-117A radar-evading fighter was finally admitted last year, with more than 50 *already built, and a fuzzy pho*tograph released of the aircraft in flight, showing it to resemble more a piece of hewn rock than anything designed to stay airborne.

The USAF's Northrop stealth bomber, the all-wing B-2, was taken more publicly out its closet in November: a four-engine boomerang, with a zig-zag trailing *edge and a* wingspan almost as wide as a B-52's. It is due to complement, and eventually replace, Rockwell's variable-geometry B-1B, heir to the B-1A which President Jimmy Carter cancelled in 1977. Both aircraft are controversial.

Under the US budget plans, the B-2 programme is put back by a year, but 132 of them are still due to be produced – at more than $500m each, the most expensive aircraft ever built.

These US and European developments take place against the background of a rapid narrowing of gaps by the Soviet Union, as the MiG-29 fighter's display at Farnborough last year amply demonstrated.

The Chinese, after basing their production on Soviet aircraft, have also done much catching up, benefiting from access to Western technology.

The key development in Asia, however, is undoubtedly the hard-fought US-Japanese agreement on the FSX fighter, a $7bn project based on the F-16. Japan, after experience in licensed production of US fighters and in its own trainers and the Mitsubishi F-1 close-support fighter, was never going *to buy off the shelf, but faced* strong opposition in the US to its ambitions. In the end, US participation has been fixed at 40 per cent, both in initial development and in production of the planned 130 aircraft.

Asraam is a joint project involving the governments of the UK, West Germany and Norway

GUIDED WEAPONS

Small is cost-effective

THE SEARCH for collaboration and *the search* for smallness are two current themes in guided weapon development.

Both are driven by defence budget *constraints* and by the need to get more missile capability for a given amount of money.

One of the most important current missile programmes is the US/European programme to develop the advanced medium-range air to air missile (Amraam) and the advanced short-range air to air missile (Asraam).

The Amraam programme is being conducted in the US through two suppliers, Hughes, the *prime contractor* and Raytheon, the follow-on contractor, for the US Air Force. The Amraam missile may also be produced for European air *forces*, which would make it one of the biggest missile production contracts. Both missiles are expected to become the standard air *to air missiles for Nato in the* next decade.

The Asraam short-range missile programme is a joint project involving the govern*ments of the UK, West Ger*many and Norway. Asraam will replace the Sidewinder missile, designed and developed in the US. The main con*tractors for the project are* British Aerospace (Dynamics), Bodenseewerk Geratetechnic and the Norwegian company Raufoss Ammunisjonsfabrik*ker. BAe is the prime contrac*tor, managing the project.

Asraam and Amraam are intended to become a family of weapons for Nato under the terms of Memoranda of Understanding between the US and the European Nato partners.

Asraam is to be produced initially in Europe and Amraam initially in the US, but the Memoranda allow for the production of both missiles in both the US and Europe.

A joint venture company, Euraam, was set up by Messerschmitt-Bolkow-Blohm and AEG of West Germany, British Aerospace and Marconi Defence Systems, to compete for the chance to manufacture the US-designed Amraam in Europe.

Britain is the leader on the plans to produce the Asraam in Europe, while West Germany leads on plans for the Amraam.

Hughes Aircraft is the prime contractor for Amraam in the *US and has tested several* Amraam missiles. Raytheon, the follow-on supplier, handed over its first production line Amraam to the US Air Force earlier this year.

The US has a different procurement process for guided missiles than that used in European countries. It has resulted in two main producers, with each standing to gain large-scale production programmes. Raytheon, although the follow-on contractor to Hughes, has forecast that it could make up to $6.4bn from further sales of all types of missiles it is involved in mak*ing as a follow-on or second* source supplier to Hughes Aircraft and to *General Dynam*ics, one of the other main US missile contractors. European manufacturers other than the main contractors do not have *this possibility.*

The missile programmes involving two suppliers in the US include the Hughes Maverick missile for the USAF and the US Navy; *the Hughes Phoe*nix missile for the US Navy; the General Dynamics Standard 2 missile for the US Navy and the Stinger missile for the US Army. *These are poten*tially enormous programmes, with the Stinger missile alone worth a prospective $2bn over the next 10 years.

The US is also working to produce an anti-tactical missile, a version of the US Army's Patriot air defence missile.

US defence companies have joined forces with West German companies in a collaboration agreement to produce an enhanced Patriot missile sys*tem. Raytheon has a team* agreement with Martin Marietta, a US contractor, and AEG, Messerschmitt-Bolkow-Blohm (MBB) and Siemens, to *carry out* research and development to improve the anti-tactical missile capability of

Amraam and Asraam are expected to be standard in Nato

the Patriot as well as the system's performance against aircraft threats.

Funding for this bilateral *co-operative effort has come* from West Germany and the US. AEG and Raytheon will share some of the first contracts under the first phase of the *joint programme*, a $6.1m US Army contract to start engineering model missile seeker modifications, with AEG working on the development of *an active missile* transmitter.

Raytheon, the fifth largest US defence contractor, last year won a $166.8m contract from the US Air Force's *sys*tem command's electronics systems division to upgrade the ballistic missile early warning system (BMEWS) site at Fylingdales, North Yorkshire, England. The familiar Fylingdales golf ball shape radar domes will be replaced by a fixed phased array radar *with three angled faces* to provide missile tracking and warning over 360 degrees.

A UK contractor is to build the technical facility at Fyling*dales, with Cossor, Raytheon's* UK subsidiary providing services for system design and installation.

One of the biggest international collaborative guided weapon programmes is the multiple launch rocket system (MLRS). This is a US missile system for use on the *battle*field alongside conventional artillery. It is being made in Europe under a *Memorandum* of Understanding between the US, *West* Germany, Britain, France and Italy.

The industrial management of this joint production and procurement programme is being undertaken by MLRS Europaeische Productions. The *launchers for the system* are being integrated by Aerospatiale in France and Wegmann in West Germany.

The British company GEC Avionics *recently delivered* the first European-built stabilised reference package/position determining system for MLRS. This equipment deter*mines the geographical* position of the launch vehicle. GEC Avionics is also producing, under licence from Allied-Signal Aerospace, the gyroscopes used *in* the rocket system.

One of the latest guided weapons programmes is for the advanced air to air missile, *(AAAM)* a long-range high-speed missile for the US Navy. Hughes Aircraft and Raytheon formed a joint venture, the H and R company, and won a 52-month evaluation phase contract late last year.

A recently-announced collaborative venture in Europe involves British Aerospace (Dynamics) and Thomson-CSF, of France. The French company is to supply the active radar seeker heads for the new *British* Aerospace medium-range air to air missile, Active Sky Flash. The project involves co-funding by Thomson-CSF of the work.

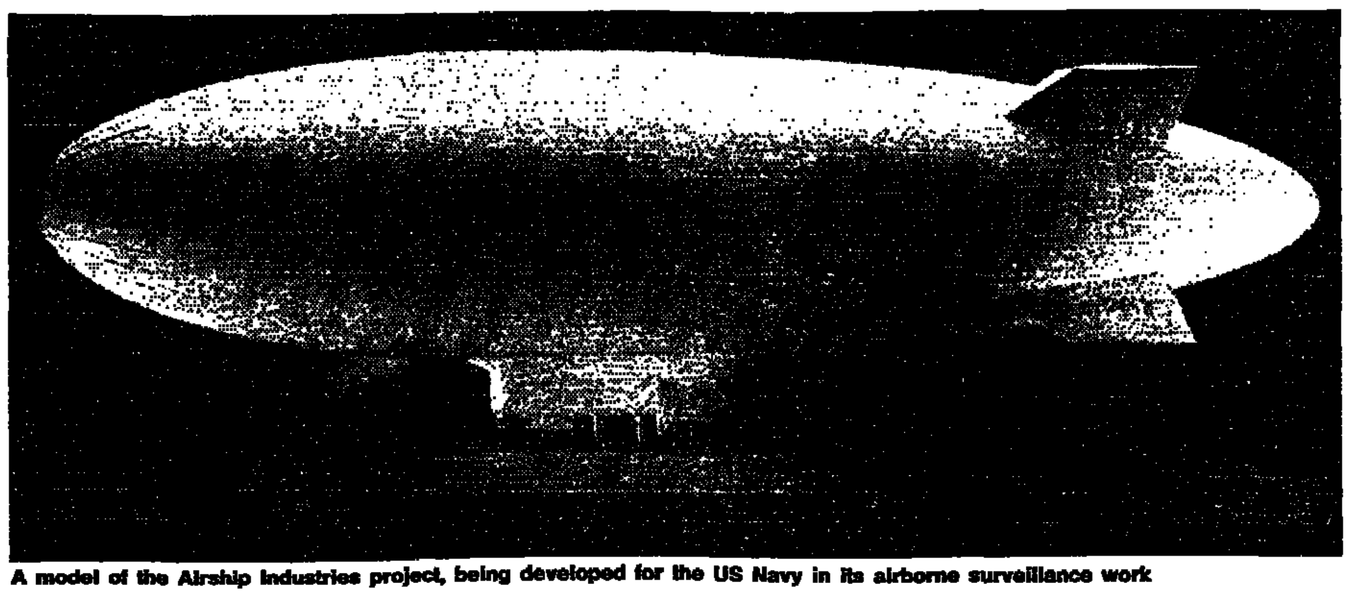
Active Sky Flash is under development by British Aerospace (Dynamics) as a company funded project, based on the Sky Flash missile in service with the Royal Air Force and the Swedish Air Force. The Thomson-CSF active radar seeker will give Active Sky Flash a fire and forget capability, making it autonomous once it has been fired from the launch aircraft.

The emerging Japanese aerospace industry is also working on new missile projects. The Japan Defence Agency has allocated Y4bn ($30m) for technology research into a new medium-range surface to air missile (SAM) to replace the US-designed Hawk missile early next century. Contractors for the new SAM include Mitsubishi Electric, Mitsubishi Heavy Industries and Toshiba who will take part in a research project to define the missile before full development late next decade.

The total programme could cost more than $7.5bn.

The smallness of some of the new missile designs is emphasised by the proposal from British Aerospace for a "hit-tile" guided weapon that would weigh just 12kg, that would not have an explosive warhead, but would be designed to aim for a direct hit each time on a target and destroy it with kinetic energy. Such a missile could be small enough to be launched from a shoulder-mounted tube and could be used against tanks and aircraft.

Lynton McLain



A model of the Airship Industries project, being developed for the US Navy in its airborne surveillance work

THE EQUIPMENT SECTOR: its importance is increasing

Contracts reflect diversity

THE EQUIPMENT sector of the world aerospace industry is as important in value as the engine and airframe sectors. Each traditionally acounts for about a third of the value of a completed aircraft.

The sector includes: avionics; airborne electronics systems; radar manufacturers (both for land and airborne applications); sub-systems on aircraft, such as undercarriages and wheels; all the internal equipment on aircraft; and products for airports, terminals and runways. Hundreds of companies compete for the business.

In the UK, the Electronic Engineering Association reported £37bn of sales by members last year, a rise of 12 per cent on 1987 and equivalent to almost a tenth of the British gross national product.

Defence is the largest sector of the electronic engineering industry, and in the UK the range of companies spans the breadth of aerospace.

Recent contract successes by the industry reflect the diversity of the equipment sector. Thorn EMI Electronics, for example, recently won a contract from the Royal Norwegian Air Force to supply radar data extraction equipment. Racal Avionics won a contract to supply a doppler navigation system for the Republic of Korea Navy, for installation in Westland Super Lynx helicopters.

GEC Avionics won a contract from Grumman Aircraft for the full-scale development of a wide field of view day-and-night head-up display for the Grumman A-6 attack aircraft, a field where GEC is one of the world leaders.

In the US, a study by Frost & Sullivan, market research consultants, has shown that the armed forces are expected to spend $6.4bn a year on electronic test systems and instruments by fiscal 1993. The consultants said:

"The electronic content of weapon systems has steadily increased, and as weapon systems increase in complexity, reliable automatic testing is crucial to sustain operational readiness in a cost-effective manner."

Also in the US, the Raytheon company, one of the prime US defence and aerospace equipment contractors, won three air traffic control programme orders last year under the Federal Aviation Administration's (FAA) multi-billion dollar National Airspace System modernisation programme. Two of these will be displayed at the Paris Air Show.

The first is the company's terminal doppler weather radar system, being developed to detect windshear conditions and hazardous weather in the airport terminal area. The multi-year contract provides funding for 47 systems, and includes an option for 55 additional systems, bringing the total contract value to approximately $282.5m.

The second is the new 20in-by-20in high-resolution colour console, which Raytheon is developing and producing for IBM under the advanced automation systems contract. Raytheon says that more than 5,000 consoles and nearly 2,000 monochrome displays will be use by air traffic controllers. The value of the contract is likely to exceed $600m.

In the US defence sector, the US Allied-Signal Aerospace company and Raytheon have been chosen by the Air Force as the winning contractor team for the full-scale development phase of the Mark XV identification friend-or-foe (IFF) system. The potential value of this programme and related activities exceeds $4bn. The system is intended to upgrade the effectiveness of US weapons systems when confronted with hostile electronic jamming.

The one-third split between equipment, airframe and engines has existed for some time, but in recent years the importance of equipment has increased. This is illustrated by the £20bn European Fighter Aircraft programme. The previous generation of fighter aircraft, such as the Tornado, had equipment that accounted for approximately one third of the cost of the aircraft. In contrast, the European Fighter Aircraft has equipment that accounts for over half.

There are several reasons for the growing importance of equipment. The prospects of improving the performance of civil and military aircraft through conventional design changes are becoming less attractive. Designers have almost reached the point of diminishing returns in their attempts to improve performance. More and more is spent to get fewer and fewer improvements.

To counter these limitations, designers have turned to avionics, airborne electronic systems, to help stretch the performance of conventional aircraft designs.

The European Airbus A320 150-seat twin-jet airliner was the first passenger aircraft in production to fly with a "fly-by-wire active control system" operating its elevators, rudder and ailerons. This computer-based flight control system does not quite take the place of the pilot, but is not far from doing so. The pilot moves his small side stick control lever to indicate to the aircraft's computer what he wants the aircraft to do. At the same time, the computer receives signals from sensors, which give it data on the aircraft's position, direction and speed.

The computer compares the instructions from the pilot with the current data on the aircraft's performance, then sends control signals to the aircraft's flying surfaces. These will move to permit the aircraft to fly in the direction desired by the pilot, but only within limits predetermined and set within the computer to keep the aircraft flying safely.

The system is called a "fly-by-wire active control system" because it uses electronic signals sent down wires, instead of solid control linkages, to activate the control surfaces on the wings and rudder.

There was concern about the safety of the fly-by-wire system after an Airbus A320 airliner had crashed at an air display in France last year, but the French authorities have subsequently cleared it of any responsibility.

The latest development is the "fly-by-light" system. This is a version of the fly-by-wire active control system where the wires carrying the electronic signals have been replaced with optical fibres. One of the first comprehensive examples of a fly-by-light system to take to the skies was made by GEC Avionics, of Rochester in the UK, to control the Airship Industries' Skyship 600 non-rigid airship.

Skyship 600 completed its maiden fly-by-light flight last October in Weeksville, Carolina. It was controlled entirely by an optically signalled fly-by-light system, developed by the GEC Avionics flight automation research laboratory. The system is based on thin optical fibre cables, which carry signals from the flight control computer to the actuation units at the rear of the airship.

The flexible optical fibre cables have several advantages. They are able to accommodate the flexing of the airship and are not susceptible to electro-magnetic interference or lightning strikes. The absence of metallic wires in fly-by-light systems is a further important characteristic, especially on applications where a low radar signature is required, as on the airship in its military role as an observation platform.

A GEC Avionics fly-by-light flight control system is being developed for the Airship Industries operational development model airship, which is being designed for the US Navy in its airborne surveillance work.

Lynton McLain

The outlook is uncertain for commercial spacecraft

Glasnost may take the pressure off

THE WORLD's commercial space efforts are entering a period of uncertainty, as the cost and usefulness of extending man's activities outside the atmosphere come under scrutiny, perhaps more intensely than in any period since the space age began in the 1950s.

Twenty years on from the first manned Moon landing, of July 1969, is a good time to reflect on the useful things that have come out of space exploration. In recent months, politicians and technologists around the globe have been considering this issue, and the answers are not altogether reassuring for those pressing for expanding extraterrestrial efforts over the next few years.

Even though there have been huge advances in rocket and satellite technology, which has led to the burgeoning growth over the past two decades in worldwide space-based communications services, many observers doubt whether similar expansion is on the point of taking place in other space-related industrial activities.

Many observers doubt whether expansion is imminent

Such operations — which happen now to a limited extent but which, according to some, could lead to big, largely privately-funded industries in the future — include remote-sensing, or the collection by satellites of Earth photographs which can be used to monitor crop growth or detect minerals deposits.

Other space-based activities that, in the past, have been projected to take off in a big way include low-gravity materials processing and the servicing of satellites by automated mechanisms aided by astronauts working in celestial "garages".

There will undoubtedly be a large demand over the next decade both for development and manufacture of commercial communications satellites, and the operation of the launch vehicles needed to get these systems into space.

Analysts expect perhaps 15 launches a year of satellites such as these over the next decade. That will entail useful contracts both for satellite builders like Hughes Aircraft and General Electric of the US, and also for commercial rocket operators.

Of the latter, Arianespace, a European consortium in which the French national space agency has a one-third stake, is expected to take roughly half the market, providing launch services for $50m-$100m a satellite. The other major players will be the launcher operations being established by three US aerospace groups — Martin Marietta, General Dynamics and McDonnell Douglas — and the Chinese Government.

The exact nature of the extra space business that will be added on to the rocket and satellite basics is, however, hard to predict. It appears decreasingly likely that developments in areas such as remote-sensing and industrial processing will add up to significant commercial opportunities over the next decade or so.

The reasons for this gloomy prognosis — which is certainly far less bullish than was the case even five years ago — stem from a number of sometimes interrelated factors connected with politics, economics and technology.

Probably the biggest blow to the world's space business has come, in an indirect fashion, from the spirit of glasnost emerging from the Soviet Union over the past two years.

Mr Mikhail Gorbachev, in calling into question many of the tenets on which the Soviet economy has operated, has caused some soul-searching in his country about the Soviet Union's own highly successful, but hugely expensive, space programme.

That has important implications — bearing in mind the prestige aspects of the two superpowers' space activities over the past 30 years — both for the scale of the US space programme and the amount of public money committed to it.

There are already some signs that, as a result of glasnost, the USSR's activities in space — in particular in relation to its Mir manned space station and the future operation of the country's version of the US space shuttle — may be cut back.

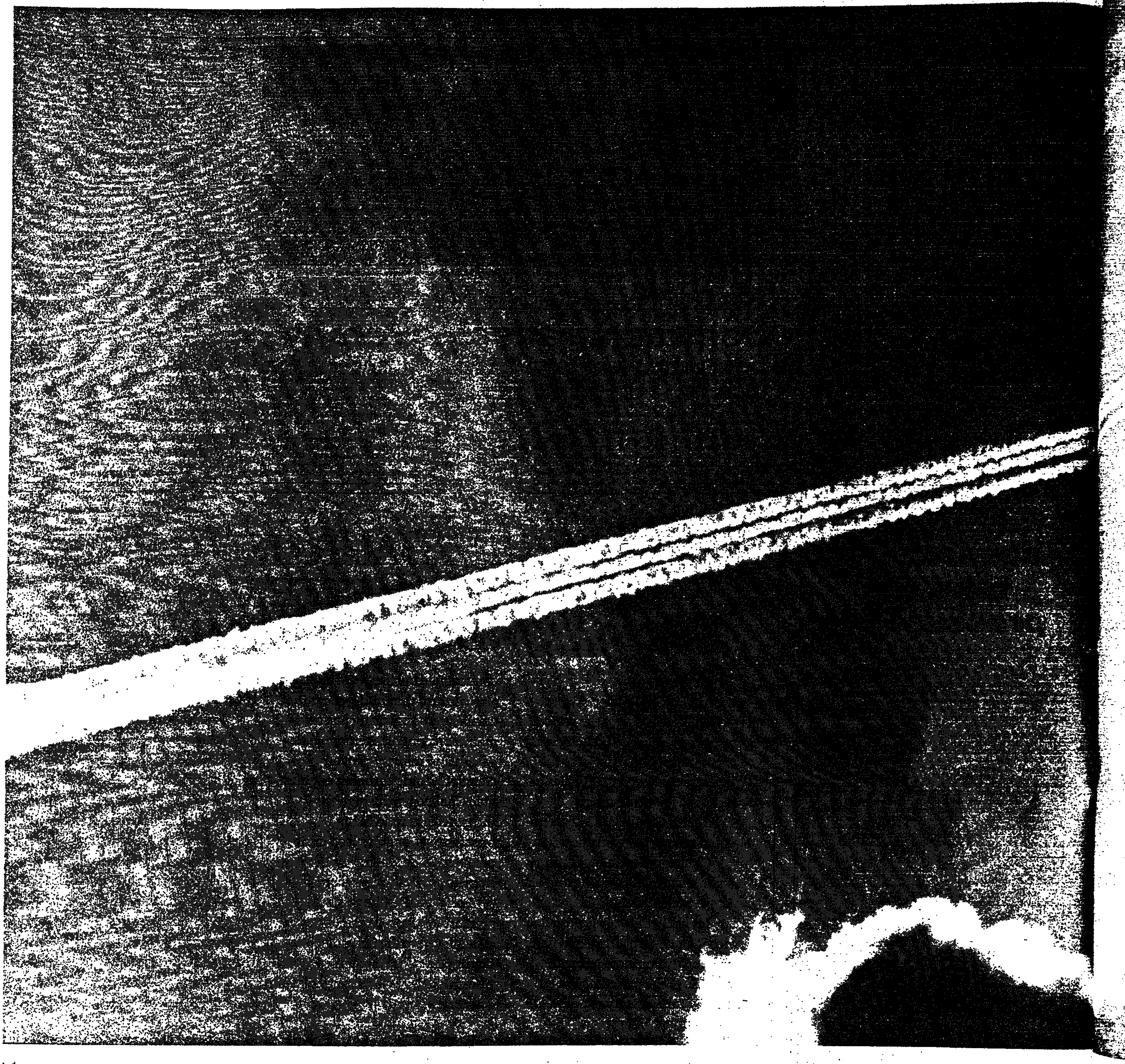
That, in turn, would lead almost certainly to less competitive pressure on the US political establishment to keep up the pace of the US's own extraterrestrial efforts as a way of matching the Soviet advances in this area — which would lead to fewer opportunities for the private sector in bringing to further development work started out in public agencies.

One example of where pressures of this kind may already be working involves the grandiose plan by the US National Aeronautics and Space Administration for a manned space station to be built in the late 1990s. This project has been rumbling on for five years, during which time the cost estimates have shot up from a modest $8bn to three times that figure. Western Europe, Canada and Japan are due to help in the development and costs of the station scheme.

There will be a large demand for satellites and launch vehicles

But because of the reduced competitive pressures from the Soviet Union — and the rather more pragmatic arguments related to the soaring cost estimates — the new administration of President George Bush is reviewing the rationale for the station. There are some signs that the project may be greatly reduced in scope, or dropped altogether. If that happened, it would be a blow to the dozens of companies, big and small, that had hoped to ride on the project's coat-tails and to gain work either in the construction programme or because of the research due to have been conducted on the orbiting base in areas such as remote sensing.

Continued on page 8



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AIR TRANSPORT: in anticipating a huge passenger increase, the airlines are building up record debts, reports **Arthur Reed**

The route to bigger profits lies through crowded skies

LEADERS of the world airline industry attending the Paris salon will be in bullish mood as their industry enjoys the biggest boom in its history.

Despite public concern about safety, delays, ageing airliners, and terrorism, passenger numbers continue to rise by about 8 per cent a year, and there seems little reason to doubt the forecast that today's total of one billion air travellers a year will double by the end of the century.

Economic factors were all in the airlines' favour during 1988 – business activity stayed strong, inflation and cost increases remained modest, fuel prices were low, and the US dollar held its own. This scene remained much the same by the spring of this year, with only two real clouds on the industry's horizon: an escalation in the price of kerosene, and concern that airports and airways will become saturated.

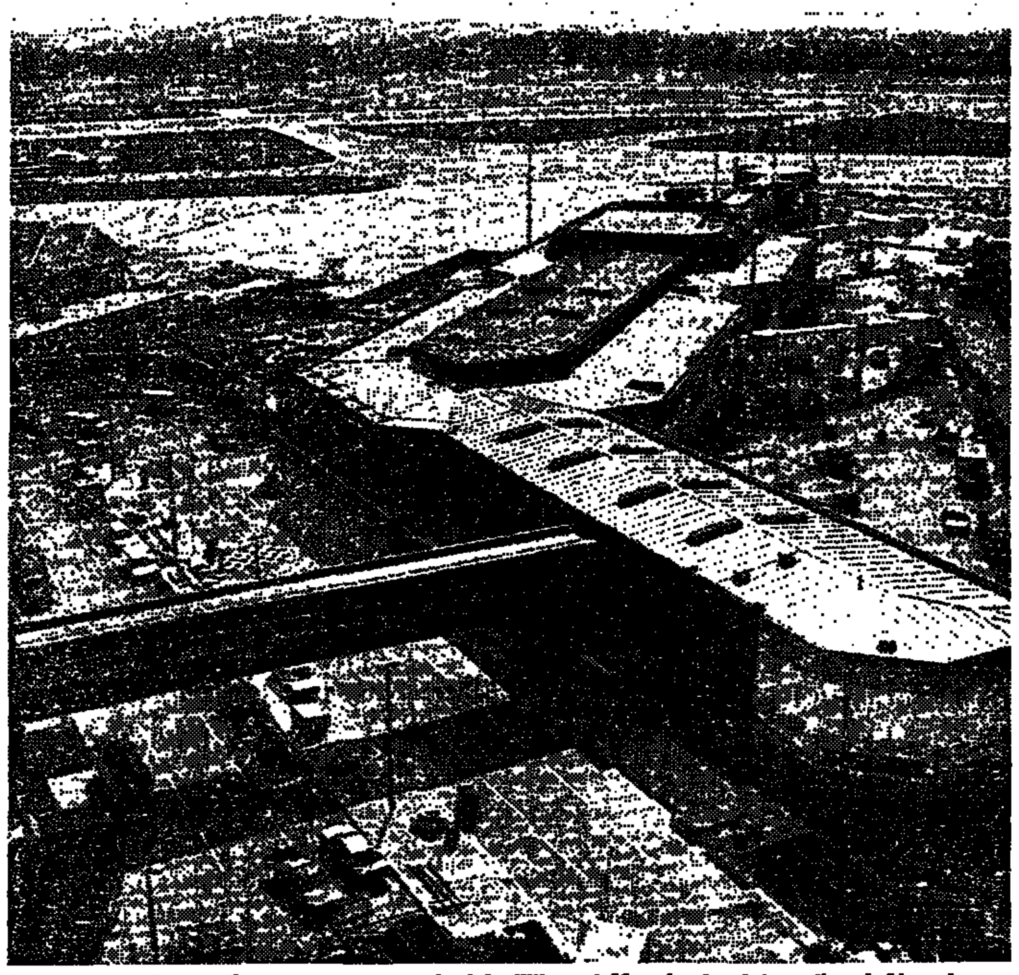
To carry all the anticipated additional passengers and freight, and to replace first-generation jets, the airlines are

Economic factors were all in the airlines' favour during 1988

on an unprecedented aircraft-buying spree. During 1988, a total of 1,047 orders, worth $47.47bn (£29bn), were placed with the five major manufacturers (Airbus Industrie, Boeing, British Aerospace, Fokker, and McDonnell Douglas), compared with 726 the previous year.

Well before the end of the first four months of this year, it looked certain that the 1988 record would be broken. Boeing, for instance, had logged 499 orders, worth $26.8bn, while during the whole of 1988 the company sold 636 aircraft, worth $30bn.

And the orders came in large packages: United Airlines, of the US, signed up for 370 Boeing jets, worth $15.74bn, and GPA, the Irish leasing group spread 308 aircraft commitments worth $16.8bn between



A new extension to the passenger terminal facilities at Manchester International Airport was opened last month, for flights within the UK, Ulster and the Channel Islands

Airbus, Boeing, and McDonnell Douglas. The latter deal accelerated the strong industry trend towards lease/purchase, rather than outright buys.

But in making these acquisitions, the airlines are building up record debts. In America, the Federal Aviation Administration estimated that at the end of last year, airlines owed $12.3bn, with annual repayments running at $1.7bn. If the traffic were to dip against the forecasts, the industry would be in serious trouble. The International Air Transport Association (Iata) continually warns that its members' net annual result, at under 1 per cent of total revenues, is not enough to finance long-term fleet re-equipment needs.

The airlines have identified two key sectors, productivity and computerisation, which they can develop in their efforts to drive up profitability. Iata statistics indicate that the one million employees in the industry are certainly working harder. Production, measured in tonne-kilometres performed per person, is increasing at about 8.5 per cent a year, compared with 4 per cent in the past.

As for computerisation, every airline of any size has now joined one of the new computer reservations system groupings in order to maximise the service they offer. In future, when customers ask for a ticket on airline X, they will also be able to make, in the same transaction, firm bookings for hotels, car hire, conference halls, rail travel, theatres, restaurants, and many other services.

A trend towards amalgamations can also be identified as airlines seek to build their financial strength. Ten years after deregulation began in the United States, eight carriers have emerged to control more than 90 per cent of the domestic market. In doing so, they have swallowed up most of the smaller, regional airlines, using them now to feed passengers into their mainline routes.

These US "mega-carriers" are today flexing their undoubted muscle to compete against airlines in Europe which, with certain exceptions, are high-cost, heavily-unionised companies, and against the emergent, low-cost airlines around the Pacific rim. To counter these incursions into their traditional markets, and

A trend towards amalgamations can also be identified

to make themselves more efficient for 1992, when the European Community trade frontiers go down, the European airlines are beginning to look for partnerships among themselves.

At the same time, the Europeans are alleging that some of the American carriers are dumping seats in Europe at below cost, as a way of attracting traffic into their lucrative home networks.

But will there be room for all of this additional traffic to fly? Dr Gunter Eser, director general of Iata, said recently that by the year 2000 there were likely to be 11,000 aircraft in airline service, or 50 per cent more than today. He said: "If aviation is to continue to underpin the expansion of trade and tourism, create economic opportunities, and provide more jobs, its natural growth must not be strangled by inadequate airport and airspace capacity."

The shortcomings of the aviation infrastructure already impact upon the annual results of many airlines, particularly in Europe, around some big cities in the US, and in parts of the Pacific/Asia region. Environmental pressures have resulted in a virtual block on the construction of new airports, while plans to extend existing airports are strenuously contested.

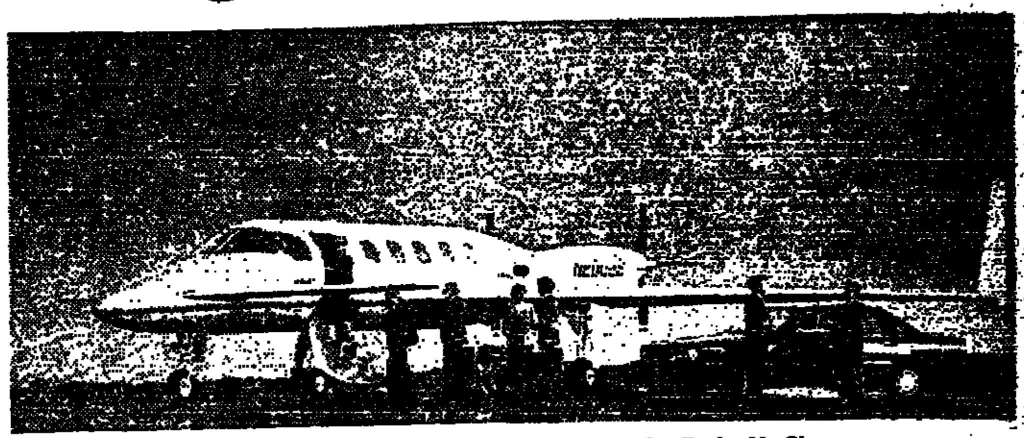
Airways are becoming clogged, especially over Europe, due to outmoded equipment, shortages of skilled staff, strikes, and varying working practices in the 20 or more centres which share control of air traffic. The problem has been quantified by the West German airline Lufthansa, which said that take-off and landing delays to its airliners during the 1988 fiscal year resulted in the expenditure of DM90m in additional fuel, and other direct operating costs.

Landing slots at most of the larger airports in Europe are now becoming so scarce that there is a strong trend for airlines to order bigger airliners so that they can carry more passengers while reducing the overall number of flights.

But some airline industry leaders think the problem could be solved through greater efficiency by those who run the airports and the air traffic control services. Mr Michael Bishop, chairman of the Airlines of Britain group, said recently that European air fares were being kept "artificially high" by badly-negotiated work practices among controllers, and the "mismanagement" of runways.

BUSINESS AVIATION

Buy your own – and forget the timetable



Starship 1 will be displayed in Europe for the first time at the Paris Air Show

WORLD AIRLINES are fighting for the patronage of the business traveller – while companies are buying their own business aircraft, to get away from the restrictions of airline operations.

Airlines want to retain business travellers, because they mean high profits and prestige. So the battle to win increasing shares of the business-passenger market is fierce, with airlines seeking ways to make the long-haul business trip more comfortable.

There is only a certain amount airlines and manufacturers can do to attract more business passengers within the confines of an airliner fuselage.

The size of seats and the space between them in the first-class and executive sections can be changed; and this has become one of the main areas where airlines can inject some differential between their competing services.

One airline, Scandinavian Airlines System (SAS), has introduced office facilities on its long-haul flights, for the business traveller who simply cannot stop working. Other ways of attracting business people include better facilities on the ground, such as exclusive lounges, some with full office facilties at airports; and comprehensive travel arrangements, taking in hotels and limousines.

But, however good the facilities, only so much can be done to ease the pressures and difficulties of air travel. Ultimately, airlines are restrictive for travellers who require the freedom to fly whenever they wish.

Business travellers seeking greater independence from crowded airports and the restrictions of timetables are turning increasingly to corporate business jet and propeller-driven aircraft. Demand for these mini-airliners is rising, with forecasts that prices for both new and second-hand ones will rise this year, according to analysts at Omni Jet Trading Floor, at Maryland, in the US.

Many business aircraft are luxurious, and some have been used as the means of introducing some of the most radical production techniques in aerospace. This is possible because they are small and their capital costs lower than those of conventional passenger airliners.

The result is the development and production of small, high-performance aircraft for business, which include the latest technologies. The Beechcraft Starship 1, for instance, is an attractive, futuristic-looking business aircraft with a fuselage made entirely from carbon-fibre composite materials. The manufacturer says it "affords an exciting new vision of what the aircraft of the future will look like. It is the first of a new breed."

The first production Starship 1 twin turbopropeller business aircraft will be displayed in Europe for the first time at the Paris Air Show, when it will be delivered to a US buyer. The first European delivery is expected by the Beech Aircraft Corporation, part of the US

Companies are turning increasingly to corporate aircraft

Raytheon Corporation, before the end of this year.

The production process for Starship 1 uses novel technology, adapted from the garment industry for aerospace – a development made possible, because the carbon-fibre structure is processed originally from a fabric. A computer-controlled cutter, known as a Gerber cutter, cuts the carbon-fibre fabric prior to the shapes being laid up for bonding and pressing with a sandwich of honeycomb material.

The result is a carbon fibre structure that is half the weight, or twice the strength, of corresponding aircraft aluminium construction.

The two fuselage halves of this revolutionary aircraft are joined and bonded in a 60ft hot chamber, 25ft in diameter, to produce a passenger cabin structure weighing just 480 pounds. This modest weight – combined with the reduction in parts required for the Starship 1, compared with a conventional business aircraft – offers the corporate business customer a light and simple structure unrivalled in civil aviation, with the prospect of lower operating and maintenance costs.

Beechcraft claims that Starship 1 will use one third less fuel than a conventional business jet, yet it flies almost as fast. It can also use short runways unavailable to a jet aircraft, enabling business travellers to land at small suburban airports.

Other manufacturers are likely to follow the lead of Beechcraft; and it is significant that such a development as Starship 1 has occurred in the US, the home of business aviation and the corporate business aircraft.

Nevertheless, business aircraft are also becoming more common elsewhere, especially in Europe. Here, the constraints of increasingly busy mainstream airports have focused attention on corporate business aircraft.

In Britain, increasing pressure at the main airports in the south-east has led to concern among the business community. The Business Aircraft Users Association for the UK, which represents the corporate aviation interests of more than 50 of the biggest companies, criticised the recommendations of a study by the Civil Aviation Authority of air-traffic policy for the London area.

The CAA had recommended restrictions on business aircraft access to major airports and to airspace. The association replied that curbs on business aviation would threaten the nation's balance of payments: member companies had a turnover of £20bn. "Their business aircraft have become an essential tool, used in maintaining and furthering these jobs and that income," it said.

"Business aviation's use of the nation's airports and airspace is highly productive while modestly demanding. One company director in a business aircraft can be a more valuable airborne passenger, as far as the nation's economy is concerned, than the total passenger load of a number of wide-bodied airliners serving the packaged holiday industry," the association told the CAA.

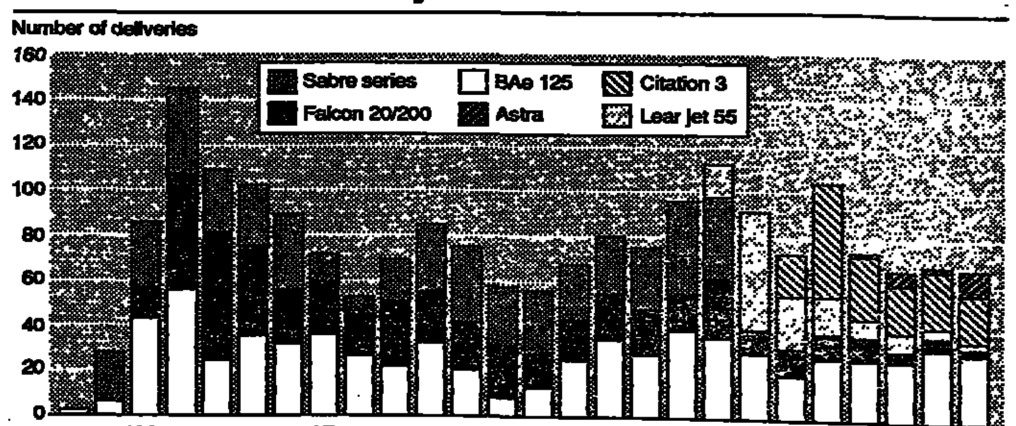
Meanwhile, the Canadian group, Canadair Aerospace, part of the Bombardier corporation, is to strengthen ties between Canada and the UK in the field of business aviation. It announced this spring that Jecco Aviation, of Bournemouth, would provide aircraft completion services for Canadair Challenger aircraft.

This contract strengthened the customer support arrangements for the Challenger aircraft in the UK, and followed an agreement earlier this year between Canadair and Cranfield Aeronautical Service, of England, for the certification of Challenger aircraft by the UK Civil Aviation Authority.

Canadair has delivered 185 Challenger twin-jet aircraft, certified for operation in 12 countries. Brazilian approval is currently under way, and certification in the UK is expected in the fourth quarter of this year, leading to the prospect of the first sales of the aircraft in Britain.

Lynton McLain

Medium cabin business jets



Source: British Aerospace (Commercial Aircraft)

Glasnost may take the pressure off

Continued from page 5

Questions related to the costs of space ventures are unavoidably bound up with technological issues concerned with the effectiveness of these activities.

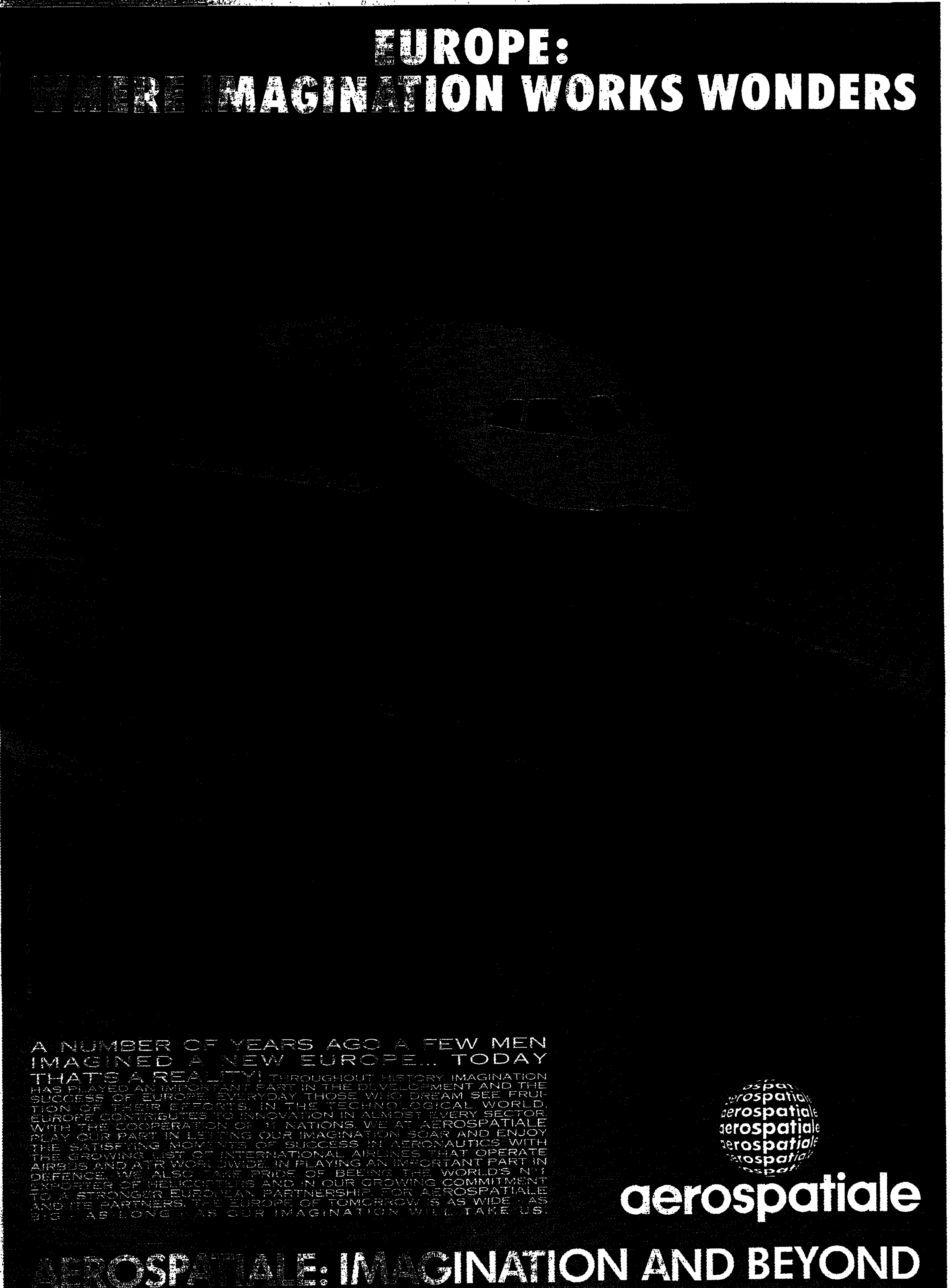
There is now much more doubt about whether grand visions in the field of space factories for making crystals and other materials under low gravity add up to a reality rather than a pipe-dream. Undoubtedly the Challenger space-shuttle explosion of January 1986, which severely threw off course the entire US space programme, has had an effect in making people question more deeply some of the perceived wisdoms of space extravaganzas.

Issues of economics have also reared up in the debate about the two large-scale and quasi-commercial activities, which now take place in one existing area of space applications – remote sensing. These projects are run by two companies: Spot Image, in France, and Eosat in the US. They involve the orbiting of special satellite equipped with cameras and other sensors. Photographs of the Earth and other images are collected from these, and sold to commercial or government groups such as farming and mapping organisations and minerals companies.

The problem with both these operations, which up to now have been heavily underwritten financially by the French and US governments, is that no one can be sure if they are essentially research projects with a commercial twist or a real business. The costs of operating the services are such that they run continually at a deficit. In the case of Eosat, in particular, there is now a question-mark over how much money the US Government wishes to keep pumping into the venture to keep it going.

According to some observers, the best possibility to sustain the world's activities in remote-sensing would be for the two services to merge in what would be a unique Franco-American partnership. That would also underline the truly international scale of space operations, and might produce a large enough flagship to propel at least one of the important areas of space business through the choppy waters that appear to lie ahead.

Peter Marsh


EUROPE:
WHERE IMAGINATION WORKS WONDERS
A NUMBER OF YEARS AGO A FEW MEN IMAGINED A NEW EUROPE... TODAY THAT'S A REALITY! THROUGHOUT HISTORY IMAGINATION HAS PLAYED AN IMPORTANT PART IN THE DEVELOPMENT AND THE SUCCESS OF EUROPE. EVERYDAY THOSE WHO DREAM SEE FRUITION OF THEIR EFFORTS. IN THE TECHNOLOGICAL WORLD, EUROPE CONTRIBUTES TO INNOVATION IN ALMOST EVERY SECTOR. WITH THE COOPERATION OF 11 NATIONS, WE AT AEROSPATIALE PLAY OUR PART IN LETTING OUR IMAGINATION SOAR AND ENJOY THE SATISFYING MOMENTS OF SUCCESS IN AERONAUTICS WITH THE GROWING LIST OF INTERNATIONAL AIRLINES THAT OPERATE AIRBUS AND ATR WORLDWIDE, IN PLAYING AN IMPORTANT PART IN DEFENCE. WE ALSO TAKE PRIDE OF BEEING THE WORLD'S N°1 EXPORTER OF HELICOPTERS AND IN OUR GROWING COMMITMENT TO A STRONGER EUROPEAN PARTNERSHIP. FOR AEROSPATIALE AND ITS PARTNERS, THE EUROPE OF TOMORROW IS AS WIDE, AS BIG, AS LONG AS OUR IMAGINATION WILL TAKE US.
aerospatiale
AEROSPATIALE: IMAGINATION AND BEYOND

David Fishlock looks at radical changes in airframe materials

Polymer path to weight loss

THE MATERIALS used to build airframe structures will change radically during the 1990s. Traditionally they have been built about 75 per cent by weight from aluminium alloys, with the balance made up of steel and titanium (10 per cent apiece) and composites (5 per cent). But this will change with the introduction of composite materials tailor-made for particular parts of the aircraft.

Advanced polymer-based composites offer enormous opportunities because of their low density combined with high strength and stiffness, according to Dr Graham Dorey, superintendent of structural materials at the Royal Aircraft Establishment, Farnborough. Dr Dorey told a conference on aerospace applications of advanced materials, held by the Royal Aeronautical Society in London: "Properties achieved so far, in what is still a relatively young technology, are modest compared with the theoretical properties." Both matrix materials and reinforcing materials are improving continuously.*

Experience so far in such aircraft as the AV8B vertical take-off fighter (25 per cent composites) has been mainly with carbon fibre reinforced plastics (CFRP). They normally offer mass savings of 10-20 per cent over the 2000 and 7000 series aluminium alloys. Sometimes the weight advantage can even exceed this span, says Dr Dorey.

His estimates of the value of this saving range from £30 per kilogram in a light aircraft, through £100 per kg for transport aircraft and £250 per kg for a fighter, to £1,000 per kg for space applications.

But composites offer other advantages, such as the fashioning of complex shapes, avoiding machining costs and waste of material, and also reducing the number of individual components as well as joining costs. Examples already flying include new aerodynamic tips of CFRP on helicopter rotor blades.

New developments in the use of carbon fibre aim to improve the compression strength and impact resistance of the composites. A tougher composite can be made using PEEK (polyether ether ketone) as the matrix. This is a semi-crystalline polymer, also resistant to most solvents. According to Dr Dorey, PEEK-based composites may raise the design strain from around 0.4 per cent for CFRP to 0.6 per cent in tension and 0.5 per cent in compression.

Another important goal of composites research is to resist higher temperatures. The epoxy resins used in CFRP are limited to about 170 degrees Celsius in dry conditions, and only about 130degC in normal atmospheric conditions because of their propensity for absorbing water. Polyimide matrices can be used at over 300degC but tend to be brittle and, in combination with carbon fibres, can show microcracking because of differences in thermal expansion.

'Everything we have achieved is modest, compared with the theoretical properties'

Still more stable polymers have been synthesised experimentally, including polyquinoxalines capable of withstanding temperatures up to 350degC; and polyimidazo quinoxalines (up to 480degC). Moisture resistance is another goal of the chemists, who have shown that acetylene terminated quinoxaline (ATQ) is completely resistant to moisture up to 250degC.

But metals are still resisting the encroachment of composites, most notably through the development of the aluminium-lithium alloys, announced in 1985, almost two decades after Farnborough first disclosed its pioneering work with CFRP.

These new light alloys are 8-10 per cent lighter than the 2000 and 7000 series aluminium alloys, and up to 15 per cent stiffer. If advantage is taken through redesign of both of these advantages, mass savings of 15-18 per cent are possible.

The damage-tolerant version of aluminium-lithium – called the 8090 series and equivalent to the 2000 series of aluminium-copper alloys – is now fully developed and available as extrusions, forgings, sheet and plate. The material matches the 2000 series in strength, fatigue strength, and fracture toughness. Earlier problems – such as unexpected fatigue behaviour – have largely been eliminated. It is planned for use in both civil and military aircraft.

The high-strength 8091 series of aluminium-lithium alloys is following the same pattern of development about two years behind.

Confidence already runs high enough in the 8090 series to explore its reinforcement with silicon carbide (ceramic) particles in order to boost stiffness still further. Such a composite, it is emerging, will compete with carbon-reinforced composites on the basis of specific stiffness. A formulation containing 20 per cent silicon carbide particles has been chosen as the best compromise between strength and stiffness on the one hand, and declining fracture toughness on the other, as the proportion of reinforcement rises in such metal-matrix composites.

Metal-matrix composites (MMC) are attracting aerospace engineering interest because they offer ways of substantially improving a variety of alloys in which the designer has already built up considerable confidence. MMCs can be included in conventional designs with a minimum of reworking.

Such materials include not only dispersed ceramic particles but continuous ceramic fibres – of boron, silicon carbide, carbon or alumina, for example. A magnesium alloy reinforced with 50 per cent of aligned alumina fibres has proved twice as strong in tension and 5.7 times as strong in compression as the matrix material. Moreover, these figures improved to 6.3 and 10, respectively, at a temperature of 315degC.

Researchers at Farnborough are also studying a system of making stronger and stiffer alloys by rapid solidification, quenching from the melt or the vapour to freeze structures unobtainable by any conventional metallurgy. The net effect is a finer grained structure, finer dispersion of reinforcing particles, and hence higher strength and stiffness.

According to Dr Dorey, this technology opens the way to entirely new compositions and microstructures. But he cautions that the methods are "inherently expensive and consideration must be given to the economics from an early stage in any development."

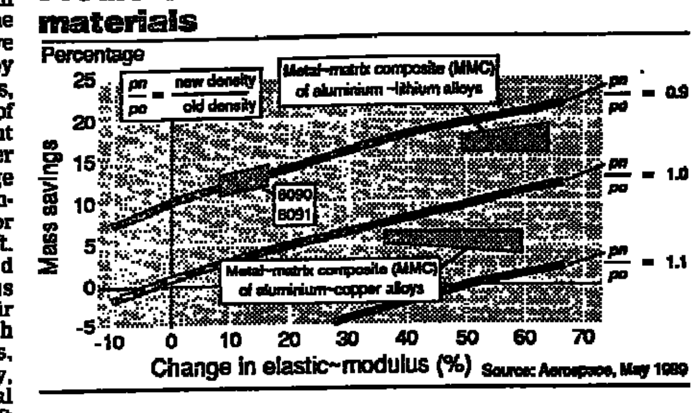
A new Link programme of research into advanced structural composites, was announced by the British government last month. It is making available up to £20m – the largest Link initiative so far – and claims to have stimulated interest among 41 companies and 23 research centres in the UK. Companies are expected to put up at least matching funds, on a programme which already has counterparts in West Germany, Japan and the US.

British Aerospace has also been trying to forge seven UK-based materials suppliers into a national materials research club, conducting pre-competitive studies on high-temperature composites of particular interest to the aerospace industry.

Prospective club members include Alcan International, British Petroleum, Ciba-Geigy, Courtaulds, Dunlop, ICI and IMI.

* *Aerospace, May 1989.*

Predicted mass savings from new materials



Source: Aerospace, May 1989

ON A COMPUTER display at the forge of Doncasters Monk Bridge, in Leeds, the chief metallurgist watches a 400kg billet of superalloy as it changes into a disc for an advanced military engine.

He can follow the metal's movement – how it flows into the die, whether it folds or fails to fill corners, where there are undesirable deformations.

"The aim is to get it right first time," says Dr David Smith, in charge of the development of isothermal forging by computer for Inco Engineered Products, a European subsidiary of the Canadian mining group Inco.

If a blacksmith tried to forge such a material, all he would do is damage his anvil, they say at the forge. These are materials for such engines as the Eurojet EJ-200 engine for the European Fighter Aircraft, scheduled for service in the mid-1990s. Beyond them lie still more recalcitrant materials envisaged for engines early in the next century, more ceramic than metallic.

The time-honoured engineering approach of making and breaking components – as well as engines – until the design team gets it right is simply too slow and too expensive today. The engine-makers have begun to model manufacturing processes in the computer. They want to understand more clearly not only what happens to a material while running in the engine, but what happens in the "engine" that shapes it, and whether its weaknesses can be eliminated at source.

For Rolls-Royce, isothermal forging of discs, impeller and blades is one of the first manufacturing processes to be modelled in the computer (along with casting and heat-treatment). The company has worked closely with the Doncasters Monk Bridge forging specialists to demonstrate that a new disc forging, which formerly needed about two years of development to put into production, can be accelerated by computer to only four months.

"It puts the science into manufacturing," says Mr David Alexander, head of manufacturing technology at Rolls-Royce, which has closely supported this project.

Isothermal forging replaces the hammer blows with a strong squeeze that slowly massages the metal to shape. The squeeze, in the 3,200-tonne forge, may take many minutes but the most recalcitrant material eventually yields, says Mr Smith. He believes there is no alternative in sight for fashioning some of the latest alloys, made from mixtures of powders, to get the properties that will keep them strong and stiff at white heat.

The stronger the alloy, the narrower the temperature "window" within which it can be forged, and the more likely it is to crack if the metal moves too fast. Isothermal forging is a way of applying low rates of increase of strain.

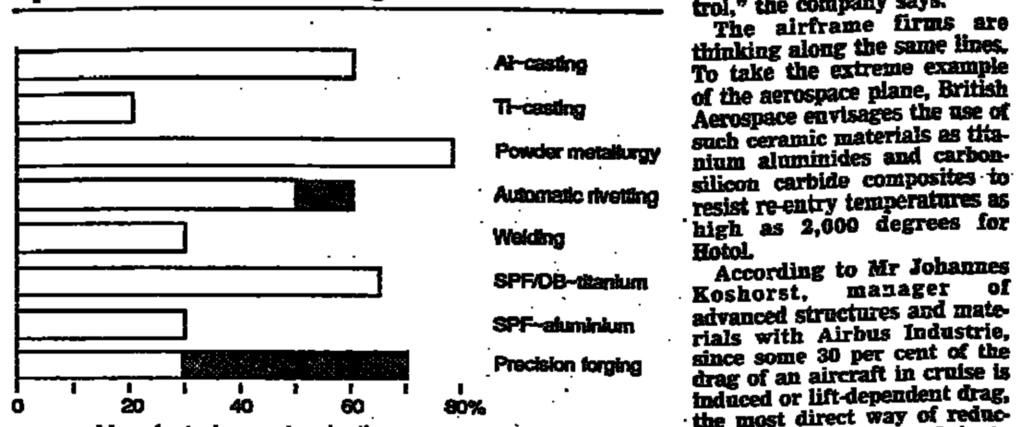
Mr Smith cites several advantages for isothermal forging over conventional practice for making discs, including close control of crystal structure, accuracy of forging, and the fact it can handle materials the conventional forge cannot. Such materials include an Inco superalloy made by mechanically alloying powdered metals.

The biggest economy in sight for Doncasters would be if it could persuade engine-makers and their regulatory authorities that, so rigorous was its process control, discs no longer needed ultrasonic inspection for cracks mid-way through the forging process. It means that forging must stop and the part be machined to facilitate inspection. At present the safety authorities insist upon it. They have yet to be convinced that every isothermally-forged disc made under the same computer settings must be identical. But that is the engine-maker's objective, says Mr Alexander.

NEW TECHNIQUES

Age of making and breaking nears an end

Advanced manufacturing technologies –potential cost savings



Source: Airbus Industrie

Rolls-Royce believes it now understands many of the hurdles that must be overcome in order to make ceramic aero-engine components. They will have to be formed near to size, with minimal final material removal, and inspected for defects that cannot be detected at present.

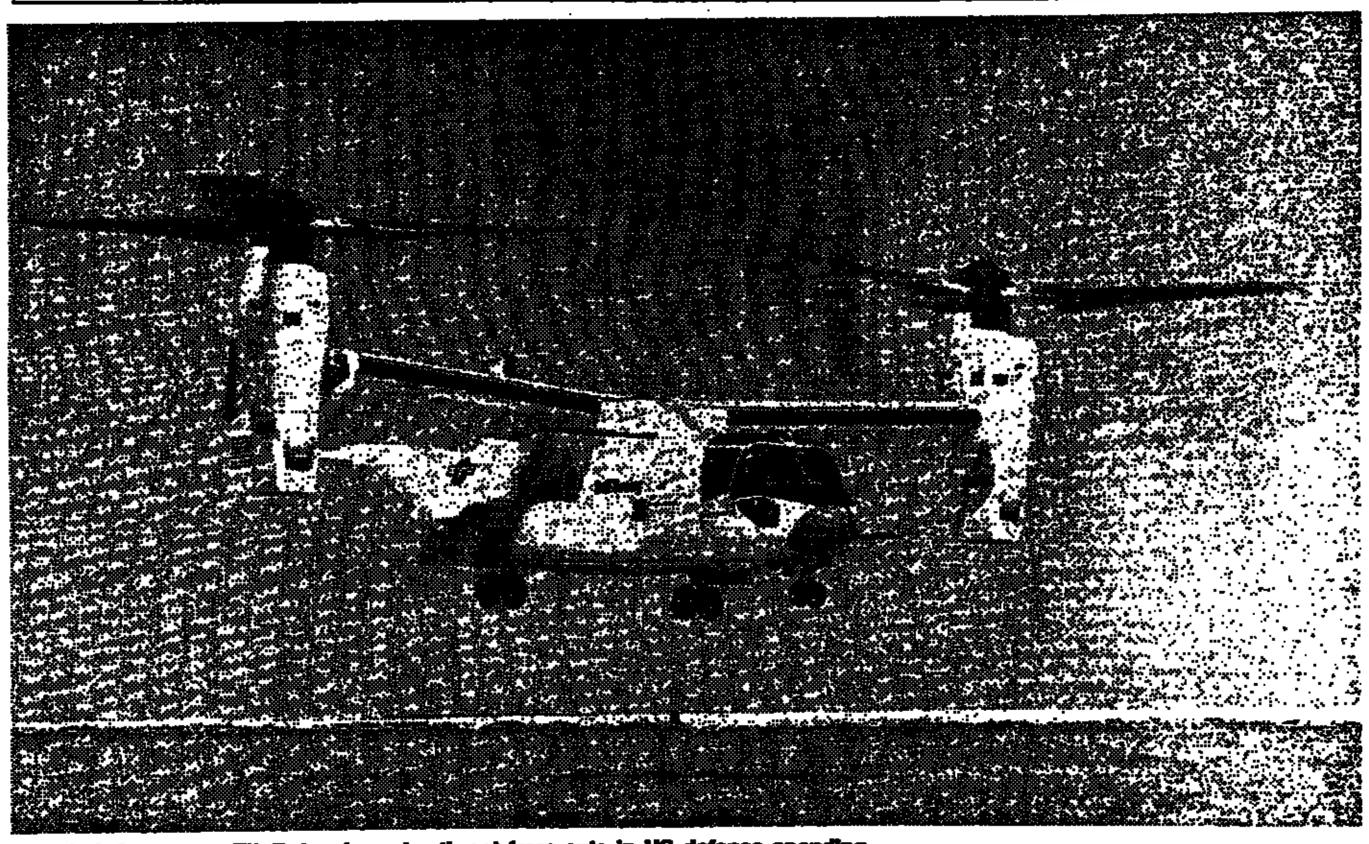
"The manufacturing processes to produce the components must, therefore, deliver the required product quality quickly by total process control," the company says.

The airframe firms are thinking along the same lines. To take the extreme example of the aerospace plane, British Aerospace envisages the use of such ceramic materials as titanium aluminides and carbon-silicon carbide composites to resist re-entry temperatures as high as 2,000 degrees for Hotol.

According to Mr Johannes Koshorst, manager of advanced structures and materials with Airbus Industrie, since some 30 per cent of the drag of an aircraft in cruise is induced or lift-dependent drag, the most direct way of reducing it and saving fuel is to make the aircraft lighter. Mr Koshorst forecasts increasing competition between composite materials and advanced light alloys for civil airframes at the turn of the century.

With Airbus 320, the company made the major advance of introducing carbon fibre reinforced plastics for such primary structural components as the vertical and horizontal tailplane. If the technology could be applied to the fuselage, it estimates a 35 per cent reduction in weight, lower manufacturing costs, and lower direct operating costs. Its hopes are pinned on a government-backed development programme being managed by MBB, in West Germany, for major fuselage components, and it hopes to introduce the composite technology into large fuselage structures around 1995.

David Fishlock


The V-22 Osprey, or Tilt-Rotor, is under threat from cuts in US defence spending

NEW WAYS OF FLYING

Release from the runway

A BATTLE will be fought in Washington during the next few months to save one of the world's most revolutionary aircraft from being axed as a result of cuts in the defence budget.

The V-22 Osprey, otherwise known as the Tilt-Rotor, which is being developed by a joint team from Bell Helicopter Textron and Boeing Helicopters, has reached the flight test stage.

Powered by two turbo-propeller engines, it combines in one airframe the ability to take off and land like a helicopter, but once airborne to convert into conventional forward flight.

The V-22's engines and propeller-rotors are positioned at the ends of the fixed wings, but can be rotated in flight. With the engines and rotors vertically positioned, the V-22 can take-off, hover and land like a helicopter. But by tilting them in flight to the horizontal position the Osprey becomes a fast, fuel-efficient, high-altitude turbo-propeller aircraft.

Such a machine clearly has many possible uses, both civil and military. Hitherto, throughout the 85 years of manned powered flight, continual efforts have been made to find new ways of becoming airborne, stimulated by the desire to fly more safely, conveniently and cheaply.

Most of these efforts have failed, either because of lack of technological knowledge at the relevant time, or lack of cash, or both. Only the rotary-winged helicopter, and more recently the jump-jet Harrier fighter with its swivelling jets for vertical or short takeoff and landing (V/STOL), have emerged as significant alternatives to the fixed-wing flight pioneered by the Wright Brothers in 1903.

It is only comparatively recently that the investigation into new flight techniques has gathered significant momentum, largely driven by a single requirement that has dominated both military and civilian thinking – the need either to transport people and supplies quickly to and from difficult places, or to deploy fire-power where it might otherwise be impossible.

In the military role, where costs have been less significant, the helicopter has served mainly as a transport vehicle, or used as a missile platform or "gun-ship", subsequently supplemented by the V/STOL Harrier fighter.

In the civilian role, the helicopter has been less successful – although undeniably valuable – largely because of its higher operating costs, its noise levels and the limitations on size dictated by its basic design.

The V-22 Osprey bids to change all that, provided the US Defence Department can be convinced that the cash involved in its continued development is worth it.

The V-22 made its maiden flight at Fort Worth, Texas, for 15 minutes on March 19, and then began a major test programme for military purposes, but with commercial use also in mind.

The original programme as funded by the Defence Department envisaged six flight-test prototypes, with an eventual $1.7bn full-scale development contract in view. Under the Defence budget cuts envisaged by President Bush, however, the Osprey Tilt-Rotor programme is up either for "stretch out" on reduced funding, or possibly even outright cancellation.

Such a situation has caused a political furore. The entire US Joint Chiefs of Staff are in favour of retaining the programme, while a "Sense of Congress" resolution passed on Capitol Hill a few weeks ago also urged retention. The battle to save the Tilt-Rotor is thus a major political issue, that seems likely to rumble on for many months.

The battle to save the Tilt-Rotor may rumble on for many months

Recognising that the original programme of more than 600 aircraft for all the US armed forces is now unlikely to be sustained, at least in the originally envisaged time-scale, the US armed forces are collectively lobbying for at least retention of the flight test programme and continued limited development, against the time when there is a more favourable financial climate for full-scale development and production. It is being argued that the V-22 Osprey represents a major breakthrough in US aerospace technology that cannot be sacrificed.

It is pointed out in Washington that various other programmes have been placed in the past under similar threats of elimination – the joint UK-US Advanced AV-8B Harrier jump-jet fighter for the US Marine Corps is a classic example – but have survived through intensive lobbying. The mood in the Congress is that the Tilt-Rotor, because of its long-term military and commercial significance, is another venture that, although an obvious target for defence budget cuts, may well survive.

What may well help this situation is that other countries are also showing interest in the venture. In the UK, British Aerospace has a contract to exploit the V-22 for military purposes in Western Europe.

In the US, the use of Tilt-Rotor type aircraft in commercial operations is not being overlooked. The US Federal Aviation Administration has shown particular interest in it as a way of taking passengers from one city centre to another, avoiding congestion at airports, and it has encouraged various studies of larger Tilt-Rotor craft as possible future passenger vehicles.

Overall, though, the concept must depend upon military development, so as to prove its overall technical viability. For this, the aerospace industry and the armed forces, and many civilian air transport users, are united in fighting for the retention of at least a minimum Tilt-Rotor development programme, so that one of the greatest breakthroughs in US aerospace technology is not sacrificed on the expedient altar of short-term budget cuts.

Michael Donne

David Fishlock on the history of the space launcher project

Changing shape of Hotol

THE CONCEPT of Hotol emerged with the Farnborough Air Show of 1984, as a horizontal take-off and landing space launcher powered by an ingenious new engine.

The engine, designed by Mr Alan Bond, of the UK Atomic Energy Authority's Culham Laboratory, melded air-breathing and rocket propulsion systems for a smooth transition from one to the other.

For the next three years, Rolls-Royce and British Aerospace co-funded phase one of the development, proof-of-concept, aided by 50 per cent government support. This brought the idea of a re-usable launcher to a point where the partners might credibly solicit large-scale government funds for a further two phases.

For instance, Rolls-Royce – helped by Mr Bond himself, seconded part-time from his own laboratory – explored ideas for an engine which behaves like a conventional jet for the first few minutes of flight then passes through a tricky transition stage where stored oxygen boosts the thinning atmospheric air, to an altitude where it becomes pure rocket wholly dependent on stored oxygen.

The air being entrained at Hotol's envisaged speed would become very hot, creating combustion problems, so the engine development team had to demonstrate convincingly how heat exchangers could keep it sufficiently dry and cool. This led to more patents.

By the end of 1987, the partners were convinced that the concept could fly, and began to solicit government backing for phase two – rig testing of key Hotol features – at an estimated cost of about £6m apiece for engine and airframe. But it flew into a new government policy of rigorously testing all pleas for technological support against an evaluation of the opportunities and risks of the market-place.

The office of the Government's chief scientific adviser seriously questioned claims being made for Hotol as an unrivalled and highly economic opportunity to put Britain in the vanguard of the space launch business. The essence of these claims is that Hotol would launch a 7-10 tonnes payload into low earth orbit at only a fifth the cost of expendable rockets, or a 2.5-3.5 tonnes satellite into geostationary orbit at half of current costs.

The Government's analysis showed that, even if the engine worked as well as was claimed, there would be a market for fewer than a score of the launchers, and scant scope for spares, normally a large part of

Hotol is now longer and sleeker, with an increased wing sweep

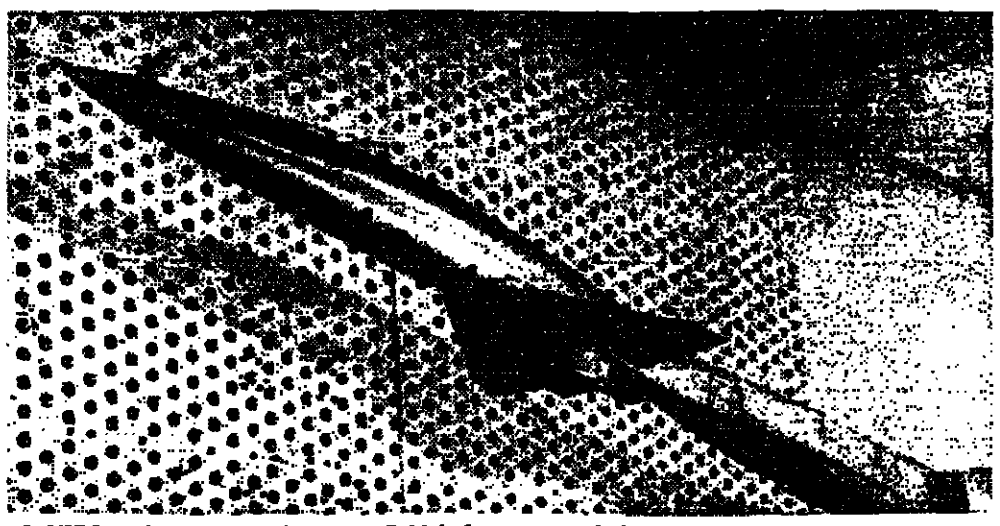
the aero-engine business. In July 1988, Mr Kenneth Clarke, then Trade Secretary, told Parliament that the scale of funding required "to develop Hotol or any similar project to eventual production would be far too great for the UK to contemplate on a national basis, particularly since only a relatively small number of such launch vehicles are likely to be required."

Mr Clarke urged Hotol's proponents to find international collaborators. He promised support for the diplomacy but offered no cash towards phase two of development. His chief, Lord Young, Secretary for Trade and Industry, then announced that the civil space budget would remain constant at about £130m a year, and the Government would continue to be "selective" in the projects in which it participated. Optimists had hoped the Government would double its space budget.

It then came to light, in August 1988, that Mr Bond had already sold his interest in the Hotol engine that they had been exploring together, to Rolls-Royce, which now owned both the original patent and others applied for while Bond was seconded to work with the company. Rolls-Royce said it was trying to get these patents declassified by the Ministry of Defence to facilitate international discussions on collaboration.

Mr Bond responded to the disclosure that he had already relinquished at least some of his rights with an announcement that British sources, which he did not specify) had offered to put up not £12m but £130m to continue Hotol development. He won widespread publicity, but his statement has never been substantiated.

At issue then – and still – is not phase two of development, but a third phase undertaking to develop the launcher,



A 1/87.5-scale model of Hotol in a British Aerospace wind tunnel

at an estimated £5bn-6bn, to make it fly as an unmanned system. As a manned launch vehicle, the cost would be higher still. Popular speculation focused on the still more ambitious notion of hypersonic passenger transport, although Rolls-Royce denies that this idea ever entered into its own calculations.

Hotol has changed its shape considerably since British Aerospace published the first artist's impressions. It has grown longer and sleeker, with a wing sweep increased to 54 degrees for improved transonic penetration.

"Not vast changes, but optimisation," Flight International reported in its review* of Hotol's "fight for life".

British Aerospace is envisaging a relatively conventional centre-fuselage structure of titanium composite material, and a nose cone of carbon reinforced with silicon carbide to withstand the heat of re-entry.

Flight reports that Mr Bond has designed a new engine called Satan, "capable of launching a significantly increased payload into space". Satan, it is said, is not covered by the patents held by Rolls-Royce, now designated the RB545 engine.

But potential collaborators appear to be scarce. British Aerospace itself apparently rules out collaboration with the US National Aerospace-plane (NASP) programme, a joint venture of NASA and the Department of Defence, on grounds that NASP is a technology programme having no pretence of developing a cost-effective launch vehicle. Nevertheless, NASP shares with Hotol such features as air-breathing propulsion and launch from a runway.

Europe's immediate competitor is Hermes, a manned recoverable, re-usable spaceplane, designed to piggyback on the Ariane-5 rocket launcher. It is designed to put up to three tonnes into orbit at 460km (or a manned spacecraft of 21 tonnes into low earth orbit).

But beyond Hermes lies Messerschmitt-Bölkow-Blohm's Sanger two-stage space transport system, envisaged as flying into orbit from a European launch base. Sanger is also seen in West Germany as the basis of a potential hypersonic passenger transport system, the MBB-HST 230, flying at Mach 4.5. This is also the speed selected by Aerospatiale in France for its proposed AGV (avion grande vitesse).

The Sanger aerospace plane is intended to be powered by by an air-breathing, hydrogen-fuelled ramjet. Last December, at MBB's factory at Ottobrunn, such an engine ran for the first time, for a total of 35 seconds.

The government-funded hypersonic technology programme aims to decide, by 1992, which of four engine configurations affords the best performance: a parallel of side-by-side turbojet-ramjet combination; an integrated turbojet and ramjet mounted in line; an integrated turbo-fan-ramjet; or an integrated turbo-expander-ramjet with hydrogen-fuelled turbine.

In each of these four configurations the turbojet would be used to accelerate to speeds up to Mach 3.5, and the ramjet for speeds up to Mach 7.

*Flight International, 25 March 1989.

Planning for a second-generation supersonic airliner has begun

Search for the son of Concorde

ALTHOUGH the useful life of the Concorde supersonic transport (SST), developed by Britain and France during the 1960s, is not due to run out for 20 years, the debate on what sort of vehicle should succeed it is well under way.

"Son of Concorde" should be flying on the edges of space within the first quarter of the 21st century.

Concorde proved two points – that it is technically possible to design and produce an aircraft which will fly as a matter of routine 2.3 times faster than the speed of sound (or 1,350mph), while cruising at 50,000ft, and able to take its place in an airport landing pattern alongside subsonic aircraft; and that there is a strong commercial market for such an aircraft, even at premium fares.

The airline and aerospace industries are, therefore, confident that a second-generation SST will be viable, although they also agree such an aircraft must be bigger than Concorde (probably with 300 seats, instead of 100) to make it economic at normal, rather than premium fares. The industry's thinking is that it should have trans-Pacific range – able to fly non-stop the 6,000 nautical miles between New York and Peking, or the 6,500 nautical miles from Los Angeles to Sydney, rather than transatlantic range.

Today's debate centres around what form the next SST will take – whether it should be supersonic, hypersonic, or even sub-orbital, and where the funds to meet the enormous design, development, and production costs will be raised. Nobody, so far, has been brave enough to table a definitive figure, but there is no doubt it will run into multi-billions of dollars.

Several projects are being considered. The American National Aero-Space Plane (NASP), otherwise known as the X-30, is the most-advanced, with 5,000 people already working on it, with $1.5bn already spent by government and industry over the past three and a half years, and with "several billions" required over the next five years.

The NASP programme is designed to produce a research vehicle, about the size of a Boeing 727 airliner, for flight tests by 1994-95. Powered by hydrogen, it would take off from a conventional runway, climb quickly into earth orbit, and cruise at 4,000mph.

If this proved successful, it could lead to a whole family of such vehicles of differing sizes and speeds. As well as providing passenger services, these could have a military use as long-range interceptors. Three airframe manufacturers, General Dynamics, Rockwell, and McDonnell Douglas, and two engine companies, Rockwell's Rocketdyne division, and Pratt and Whitney, are working on NASP contracts.

Dr Robert Barthelemy, responsible for directing the NASP programme, said: "We are looking at the beginning of the hypersonic era, with

'We are looking at the start of the hypersonic era, with speeds of up to 15,000mph'

speeds of 5,000mph, 10,000mph, even 15,000mph." These were brave words, but a doubt has been cast over NASP recently by its inclusion in the list of projects to be considered for delay, or even cancellation, as the Bush Administration seeks to lop $10bn from the defence budget.

McDonnell Douglas's Orient Express project is providing much of the technology for NASP. It is so called because the US company's traffic forecasts show that up to 188m people a year will travel between the US and the nations of the Pacific rim by the year 2020 – 65 per cent of the worldwide traffic on flights longer than 4,500 nautical miles.

With a view to tapping this business, the company looked at a range of high-speed transports, including an airliner which will fly at Mach 2.2, the same speed as Concorde, carrying 305 passengers at 65,000ft, powered by conventional jet engines and fuels; a hydrogen-powered hypersonic vehicle to fly at 3,500mph at 100,000ft; and a vehicle powered by 225,000lb of liquid natural gas cruising at 105,000ft at a speed of 3,380mph.

The latter design would fly 300 passengers between Los Angeles and Tokyo in two hours, and between Washington DC and Peking in two and a half hours. There would be no windows, because of the high external skin temperature, passengers and crew relying on video displays to provide visual contact with the outside world.

Aerospatiale, of France, has two proposals – a larger version of the Concorde, called the ATSF (Avion de Transport Supersonique Futur), designed to fly 200 passengers over 6,500 nautical miles, and the AVG (Avion à Grande Vitesse), to cruise at 3,100mph, with 150 passengers. Both have reached what the company calls "preliminary design" stage. British Aerospace has a team of about 60 people working on its Hotol (horizontal take-off and landing) project, a space vehicle which would use ramjets – air-breathing engines – to power it to a height of 18 miles and 3,800mph, at which point a liquid oxygen engine would accelerate it into orbit at 25,000mph. Hotol has been designed initially to carry payloads into space far more cheaply than the US space shuttle, but there is a longer-term proposal for it to whisk passengers from London to Sydney, Australia, in just over one hour.

West Germany and Japan are each involved in studies of hypersonic and space vehicles.

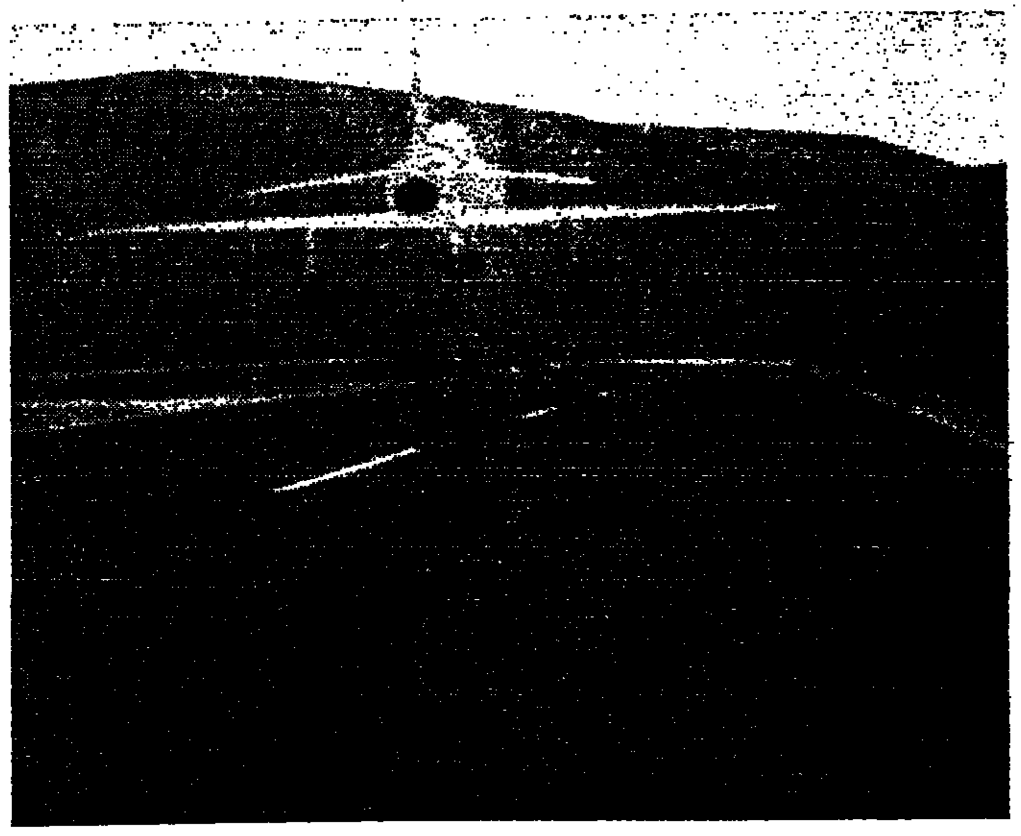
Since Concorde was developed a quarter of a century ago, awareness of environmental issues has increased, and this poses two important challenges for the makers of the next SST. These are, engine noise on take-off, and the sonic boom which every aircraft produces all the time it flies faster than the speed of sound (635mph).

The first problem can be overcome with what is known as a variable-cycle engine in which the flow of air through the power plant is altered at various stages of flight. On take-off, the jet velocity would be low for quietness sake. There would be no noisy after-burning of fuel, as happens with Concorde as it gathers speed along the runway.

Sonic boom is a far more intractable problem. One partial solution is to fly higher, and the McDonnell Douglas view is that at 100,000ft the pressure impact on the ground of 1lb a square foot (compared with Concorde's figure of 2.5) might be publicly acceptable.

A further conundrum, referred to earlier, is who would pay for a new SST? The vast sums involved can only be met by an international consortium, consisting of the US, Britain and other European countries, and possibly Japan. Within a few years from now, the National Aero-Space Plane, the NASP, will almost certainly turn into the World Aero-Space Plane – the WASP.

Arthur Reed



□ Left: The crew and the controls are real — the runway is an electronic illusion. The flight deck of British Airways' latest Boeing 747-400 flight simulator was built by Rediffusion Simulation. Out-of-the-window scenes are created using a Novoview SP-X image generator, and presented to the pilot through 150 degrees of continuous horizontal vision, using a Suprawide display system. □ Right: a Novoview LCV daylight image of a BAe Hawk

Crew can qualify to fly a different aircraft without boarding it

Purchases change the look of the simulator business

THE ELECTRONIC flight-simulator sector of the world aerospace industry, worth at least £350m a year for big civil aircraft simulators and much more when military markets are included, has been transformed over the past year, with changes in the ownership of several companies.

Simulators are used as training aids, to mimic on the ground the performance and operating characteristics of military and civil aircraft and equipment, such as guided missiles and command and control systems.

They have reached a stage of realism and reliability that enables airline and military customers to re-train pilots and flight crew entirely on a simulator. This means that crew can qualify to fly an unaccustomed aircraft before setting foot onboard. Simulators can also be used to check on the proficiency of flight crew.

A full flight-simulator for a Boeing 747 jumbo passenger airliner costs typically about £8m to £10m, and takes between 14 and 18 months to build, although competitive pressures and high demand from airlines is leading to changes that could cut the production time to about a year for a large simulator.

The transformation of the corporate structure of the simulator industry has come about with the purchase and sale of several of the main companies. The result is the creation of a virtual duopoly of two main groups of competitors. These are based on CAE, of Canada, and Hughes Aircraft, part of the General Motors Corporation in the US and the newcomer to the civil aerospace flight-simulator market.

Other, smaller, companies are still nibbling at the edges of specialised or national market sectors for simulators. Companies in this category include Thomson-CSF, of France, which has a significant

Sales have created a virtual duopoly for two main groups

involvement with the market for civil airliner simulators for customers of Airbus Industrie.

The two main groups, Hughes Aircraft and CAE, are both based in North America, but Britain remains an important manufacturing base for simulator equipment.

The British holding company, BET, sold its Rediffusion Simulation subsidiary company to the US Hughes Aircraft subsidiary of the General Motors corporation last year. The acquisition gave Hughes an instant entry into the commercial airliner simulator market. Hughes Aircraft also bought the training and control systems division of Honeywell in December 1988. This specialised in training systems.

The Honeywell division was incorporated with Rediffusion Simulation, the US offshoot of Rediffusion Simulation in the UK, to form Hughes Simulation Systems, which will work on equipment for the US military market.

This is one of the three companies in Hughes Training and Support Systems group. The group includes Rediffusion Simulation, the UK company, and employs 7,500 people.

Mr Albert Jicha, the president of Hughes Training and Support Systems, said in London recently that he was aiming for the share of the world aerospace simulator market held by Rediffusion Simulation to rise from its present 30 per cent to between 45 per cent and 50 per cent by the early 1990s.

Mr Jicha forecast a "significant growth in flight simulation and pilot training over the next decade". The consolidation of Rediffusion and the training and control systems division of Honeywell into Hughes made the company "a leading participant in the market", he said recently.

Hughes Aircraft is already expanding the production capability of Rediffusion Simulation to meet forecast continued growth in the market for aerospace simulators. Rediffusion Simulation is to begin assembly of its commercial flight simulator products at its plant in Tulsa, Oklahoma. Production at Tulsa is to be based on the assembly of hardware and software models, which will be built at Rediffusion's main plant at Crawley, in the UK.

The first simulators will be completed at Tulsa within about 18 months, and will be for the smaller jet and propeller transport aircraft with 75 to 120 seats.

The production of simulators for large civil airliners will remain at Crawley, where production capacity has been increased by almost 40 per cent in the past three years. Mili-

Rediffusion expects orders for 35 a year over five years

tary training simulators would also continue to be made at Crawley for the UK market, where it has a 40 per cent share, for Europe and the rest of the world.

Rediffusion Simulation is also to expand on the site of the Hughes Micro Electronics factory, at Glenrothes, in Scotland. Initially, the simulator company will establish a systems engineering facility, with the immediate creation of between 30 and 40 jobs this summer.

The Canadian company CAE Electronics is probably the biggest aircraft flight-simulator company in the world market, with an estimated 60 per cent of the world market for civil aircraft simulators. The company bought the Link division of the Singer Company, in the US, after the American entrepreneur Mr Paul Bilzerian had broken up Singer, formerly a main competitor in the flight-simulator sector. The Link division is based at Binghampton, New York, and has concentrated on military aerospace flight simulators.

The US civil simulator business and the UK-based Singer Link-Miles operations were retained, and continue to be a formidable presence in the simulator market. In the UK, Singer Link-Miles, based at Lancing, currently is building two BAe Harrier GR5 simulators for the Royal Air Force.

Other changes in the world simulator market include the purchase by British Aerospace (BAe) of a major stake in Reflectone, a US company which makes simulators for small airliners. BAe formed its own simulator company, British Aerospace Simulation two years ago.

Smaller companies involved in the market include Systems Designers, the UK computer software company in which British Aerospace has a stake. Ferranti and Marconi, part of GEC, are also involved in the market.

With the current buoyancy in the civil aircraft market, flight-simulator companies have also done well with record orders in recent years. Last year, the manufacturers received orders for 45 full flight-simulators, the type that move to simulate the motion of an aircraft, and 10 fixed-based simulators. Rediffusion has forecast a total of about 40 orders for flight-simulators of all types this year, shared between the main manufacturers.

Airliner manufacturers are forecasting continued growth in demand from airliner operators, with Boeing, the world leader in airliner sales, forecasting a continued high rate of airliner deliveries for the next few years.

Lynton McLain

IN PART TWO: country reports

The then world champion drops in at Farnborough

Aerospace exports top £6bn in the UK

□

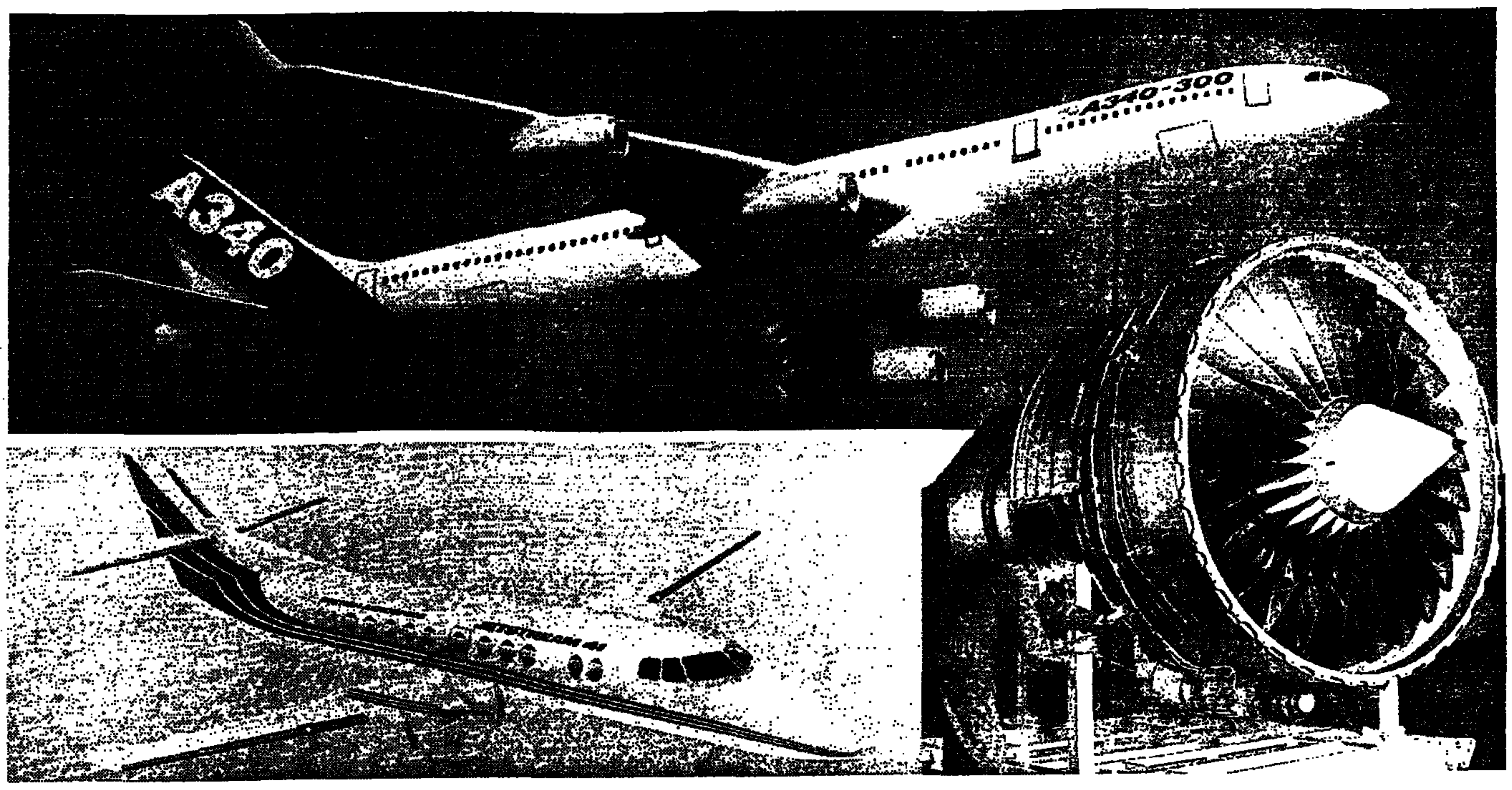
Concern for quality in US, despite boom

□

Australian plans for a world spaceport

■ When the Antonov AN-124 freighter, from the Soviet Union (above), arrived at the Farnborough Air Show, in the UK, last September, it was the world's largest aircraft. It has since surrendered its title to another Russian-built jet. See Part Two of this survey, also included with today's FT.

FINANCIAL TIMES SURVEY



AEROSPACE

PART TWO

Exports boost trade balance

The aerospace industry in the UK is enjoying prosperous times, with more than half the aircraft produced last year going abroad, writes Michael Donne

THE UK aerospace industry experienced another successful year in 1988, with a trade surplus of £1.7bn. Aerospace exports exceeded £6bn, the highest annual figure recorded, up 7.6 per cent on the 1987 level of £5.6bn. But total aerospace imports were also high, at over £4.36bn, reflecting significant deliveries to UK airlines of US-built jet airliners.

Over the past three years, however, the aerospace industry has contributed more than £6bn to the UK's trade balance, and although heavy imports seem likely to continue, this positive trade balance seems likely also to prevail for some time.

UK manufacturers are doing well. Figures collated by the Society of British Aerospace Companies show that, during 1988, the industry produced 279 aircraft, of which 161 were sold abroad.

Total export sales of new aircraft by value amounted to nearly £800m, with another £959m in aircraft repaired or refurbished for overseas customers, while aircraft parts contributed over £1.7bn. Aero-engine and parts exports were also high, at over £1.7bn.

Two of the most significant recent developments in the UK industry have been the drive to reduce costs, resulting in the restructuring of management in some companies, such as BAe; and the move by the Government to expedite the privatisation of Short Brothers.

BAe, which is now a massive conglomerate including the Rover motor group and the formerly government-owned Royal Ordnance factories, last year earned a record pre-tax profit of £236m on a turnover of nearly £5.64bn. For the current year, the group is forecasting a big increase in turnover to some £8bn, of which export sales will amount to more than £5bn.

BAe is now ranked number four in terms of sales in the world aerospace league, after Daimler-Benz of West Germany (which now *itself* includes Messerschmitt-Bolkow-Blohm), Boeing and McDonnell Douglas of the US, and ahead of such other major aerospace companies as Lockheed of the US, Aerospatiale of France, and GEC and Rolls-Royce of the UK.

The group's rationalisation has been proceeding rapidly over the past two to three years, stimulated by the need to cut costs and improve efficiency in an intensifying competitive climate, but especially as a result of the weakness of the dollar.

The result of the latter is that the dollar revenues from civil aircraft sales do not meet the costs of aircraft manufacture in sterling terms. This, together with continued losses on Airbus wing manufacture, resulted last year in a loss of £49m on commercial aircraft activities, from a turnover of £918m.

Of that loss, some £41m occurred on Airbus wing production, despite the major efforts made by BAe to cut costs (production time per wing set is already down from 74 days to 45, and is due to come down further to about 23 days by 1992, even below Boeing's own wing production time schedules).

BAe is hoping that recent restructuring of the top management of Airbus, including the appointment of a new chairman, Dr Hans Friderichs of West Germany, and its own Mr Robert Smith (formerly finance director of Royal Ordnance) will result in significant improvements in management quality and financial accountability, and consequently also improved operating efficiency through more competitive tendering.

As part of its effort to reduce costs, BAe is now assembling its Type 125 business jet in 12 weeks per aircraft, against 19 weeks in 1987, and has cut assembly time for the Jetstream 31 from 16 weeks to 10, and of the Type 146 four-engined regional jet airliner from 26 weeks to 12. This has enabled it significantly to cut its inventory costs, thereby further improving its overall efficiency.

In addition, BAe is making significant profits from the military aircraft and support services group, and from weapons and electronics.

The military aircraft and support side of the business is already benefitting from the major new agreement with Saudi Arabia, signed some time ago (called Al Yamamah II), for the continued expansion and updating of the Saudi Arabian air defence establishment, including the provision of new military aircraft, and construction of airfields and other infrastructural facilities.

Professor Roland Smith, chairman of BAe, has said that the group as a whole can expect a "huge improvement" in turnover and profits stemming from the Saudi Arabian deal.

Some suggestions have put the gross benefit to the UK over the remaining years of this century at as much as £150bn, in the supply of aircraft weapons and support equipment over the years of service life.

Much of this will accrue to BAe for Tornado and Hawk aircraft, and the construction of air bases. Also included will be substantial procurement of Black Hawk and other helicopters from Westland, with Rolls-Royce engines also heavily involved.

In the meantime, the group is increasing production of its various aircraft, including the Type 146 four-engined regional jet airliner and the Type 125-800 business jet, to meet rising demand.

The privatisation of Short Brothers is now approaching its climax. Over recent weeks, two major bidders – a group comprising GEC of the UK and Fokker of the Netherlands, has been competing with Bombardier, the Canadian transport congolmerate that includes Canadair – to bid for the company.

Their final submissions were *made by April 30, and the Government* at the time of writing was assessing them. The aim is to sell the company as an entity, for the best possible price, having been obliged not only to pick up the company's debts of £390m but also to restructure its capital, involving an outlay of public funds estimated to be between £700m and £850m.

One of the key issues is the future of the Short Brothers proposed venture, the FJX, designed to carry 48 passengers over short ranges. Development and initial production of such an aircraft is estimated to amount to about £500m. Some government launching aid is likely to be available, but the rest will have to come from the company's own resources and from any international partners it may secure.

The future of such a venture will depend entirely on who takes over the company. If the winner in the contest is Bombardier, it seems certain much of the work done on the FJX will be merged into that company's own New Regional Jet (NRJ) aircraft, a direct competitor in world markets to the FJX.

If the winner is GEC/Fokker, the future of the FJX must be in some doubt, because it would be a direct competitor to Fokker's own 50-seater Type 50 turbo-propeller airliner.

The problem is a difficult one, not only for the potential buyers of the company, but also for the Government, which is committed to seeing Short Brothers continuing as a major force in the Northern Ireland economy.

☐ TOP: British Aerospace is building the wings for all the European Airbuses, including the latest long-range four-engine A-340 (pictured) and the medium-range twin-engine A-330.

☐ LEFT: The new British Aerospace Jetstream 41 regional airliner, with 29 seats, was launched last month, on the basis that it would win at least 400 orders, mainly from the US market. BAe expects it, and the existing Jetstream 31, a 19-seater, to win more than *half the US market for these* sizes of airliner.

☐ RIGHT: The Rolls-Royce RB-211-524L is the world's most powerful jet engine. Now under development, it will be capable eventually of thrusts of 80,000lbs.

CONTENTS

Paul Betts on the effects of the French government's proposed cuts in defence spending

Civil export orders rise as balance shifts

BOUYED BY a vigorous civil aircraft market, but dampened by the contraction of the military market, the French aerospace industry is undergoing a delicate transition period of restructuring and change.

Since the 1960s, the industry has owed the essential part of its growth and development to the military sector, which has propelled it to third place in the western aerospace league, after the US and the UK aerospace industries.

The military sector continues to account for the largest share of French aerospace industry annual turnover. But last year its share of the industry's total turnover of FFr83.9bn (£7.8bn) had declined to 57 per cent from 59 per cent of the previous year's total. In 1969, military sales still accounted for 64 per cent of the industry's overall turnover, but this was already down from the level of around 70 per cent at the beginning of the decade.

The shifting change in the industry's balance is even more evident in the figures for new orders. Civil export orders rose especially sharply last year, accounting for 67 per cent of the industry's total export orders, compared with 57 per cent in 1987. In 1982, civil export orders had accounted for barely 20 per cent of total industry export orders, rising to 27 per cent in 1983 and 46 per cent the following year.

This evolution was also eloquently reflected in the financial results of Aerospatiale, the state-owned aerospace group, which recently reported for the first time in its history that the turnover of its civil aerospace activities had overtaken military sales last year. The company, whose sales rose to FFr28bn last year, and whose orders increased from FFr29bn in 1987 to FFr38.4bn last year, expects this trend of strong performance in its civil side to continue this year.

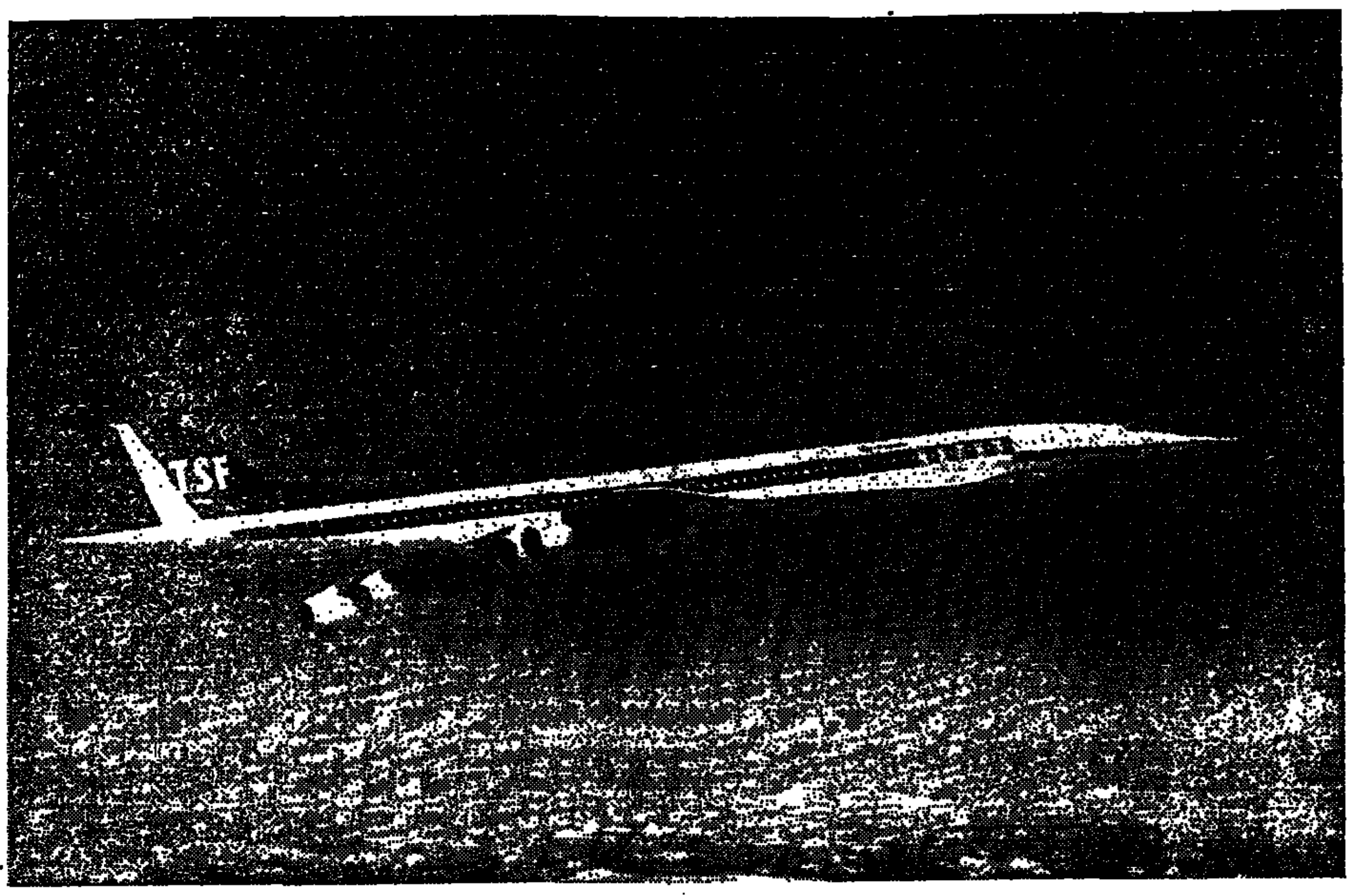
Indeed, apart from its share in the Airbus and ATR commuter airline programmes, Aerospatiale's civil helicopter business has also enjoyed a recovery with Aerospatiale's American subsidiary, moving into first position in the market for private helicopters in North America last year.

Airbus and ATR programmes are expected to accelerate growth in the company's civil sector. Strong demand for civil aircraft is now expected to increase the Airbus production rate to 107 Airbuses to be delivered this year, compared with 61 in 1988, and rising to 134 in 1990 and up to 200 by 1994. Thus the present rhythm of four aircraft per month is expected to double by June 1990.

Coupled with the rise of the civil part of the French aerospace business, the space sector has also continued to grow strongly with the success of the European Ariane rocket. The turnover of space activities has doubled over the last four years, and space today already accounts for about 8 per cent of the French aerospace industry's total sales.

But these encouraging developments have been offset by concern over the future of the industry's important military activities. Stagnant military export orders in a highly competitive environment, coupled with cutbacks in government defence spending, have made life extremely difficult and uncertain for the military side of the industry.

The industry is now especially concerned about French government proposals to reduce the country's four-year FFr470bn defence procurement programme as part of the a general policy of budgetary rigour. It fears that these cuts could delay the timetable for key new projects, like France's new-generation advanced Rafale fighter jet, or the new Franco-German combat helicopter.



Aerospatiale is conducting studies on a second-generation supersonic passenger aircraft that would have a range of 7,500 miles

These cuts are likely to accentuate the evolution of the industry, weighing the balance even more heavily on the civil side, at the same time as heightening the need for further broad restructuring in the industry, as well as encouraging new alliances and concentrations. The difficulties of the military market have made the future especially challenging and clouded for the Dassault-Breguet aerospace group, which has traditionally relied heavily on its military business.

Dassault's future now hinges on the development and production of the Rafale advanced fighter jet. Although the French Government has repeatedly confirmed its commitment to the project, it has failed so far in its efforts to find other European countries to co-operate in the French programme, which is in competition against the rival European Fighter Aircraft (EFA) project.

During the last 18 months, Dassault has been forced to launch a major restructuring programme, involving plant closures, in the face of the general stagnation in the military side of the business. The group, only last April, announced the closure of its factory of Colomiers at Toulouse.

The increasing importance of the civil sector is also having a major impact on the country's aerospace components suppliers, which saw the turnover in their civil business increase to FFr8.2bn last year from FFr5.8bn the year before. In contrast, military sales, while remaining much larger, fell from FFr16.2bn in 1987 to FFr14.7bn last year.

The French aerospace components industry has also been in the throes of restructuring. Indeed, it has been the stage for one of the most important regroupings in the French industry so far, with the merger of the flight electronics activities of Aerospatiale with those of Thomson CSF, the state-controlled defence and electronics group.

THE US

Jet builders concerned over quality

IT IS boom time for US civilian aircraft-makers, but you would not know so from their deeply furrowed brows. They are far too pre-occupied worrying about how to build the airliners on their bursting order-books to enjoy the prospect of big profits.

In fact, their concern could be justified. Intense competition between Boeing and McDonnell Douglas, of the US, and Airbus Industrie, of Europe, has kept margins razor-thin – Boeing's is 5 per cent on airliners – when the costs of expanding production capacity are mounting rapidly.

McDonnell Douglas shocked Wall Street when it announced that it had an operating loss of $66m on airliner production in the first quarter, even though it was working at peak capacity. It has an $18bn order-book, and has doubled its workforce in the past two years. But gross inefficiencies and niggling quality problems had swamped its production line and run up costs. A complete new team of senior managers parachuted into the company's airliner operations to try to sort things out.

Boeing, too, is struggling to maintain its legendary high standards of quality and on-time delivery, in the face of the deluge of orders. For the first time in 20 years, it has fallen behind schedule on a new programme. The 747-400 has been delayed by many design changes and difficulties in developing an electronic cockpit.

Management throughout the industry must be trying to put the worse-case scenario out of mind: they will labour mightily over the next year or so to get back on track, and just as they manage it, the world economy will turn sour and a whirlwind of cancellations from airline customers will clean out their order-books.

For now, the makers of jet airliner are still very bullish. Boeing has raised its forecast for worldwide demand between now and the year 2005 by $100m, to $516bn-worth of airliners. The breakdown is $96bn of current backlog, $125bn of replacement aircraft, and $295bn of equipment to accommodate growth. Boeing reckons world traffic will grow at an average annual rate of 5.4 per cent until 2005. It believes the 1990s could be the best decade it has ever had.

The second half of this decade is stunning enough. Boeing booked orders for 636 aircraft last year, worth $30bn, breaking its previous record of 461, worth $20bn, set only the previous year. McDonnell Douglas booked firm orders for 246 aircraft, compared with 138 the year before.

Two main trends are apparent. First, airlines are graduating to bigger aircraft, because of the increasing congestion of airways and airports. Moreover, larger aircraft offer cheaper operating costs per seat-mile. Second, manufacturers are not planning any big leaps forward in technology. They are going to meet users' needs for ever-cheaper but more reliable aircraft with models evolving from their current ranges.

Thus, the only new model Boeing is talking of is the 767-X, a wider version of its not-quite wide bodied twin jet. Farther down the road, it might stretch the seating capacity for the 747-400. McDonnell Douglas is already talking to airlines about a stretch version of its MD-11, even though the base model will not make its maiden flight until this summer. Boeing shelved two years ago plans for a prop-fan airliner, and McDonnell Douglas is thought likely to mothball its version once flight testing is completed within the next two months.

The strains on the two makers of jet airliners are also showing up on their sub-contractors, although the strong demand could yet be a saving grace to Lockheed. Since it completed the US military's orders for C-5A heavy transport aircraft, Lockheed's Georgia plant has been sadly lacking for work. Employees have been lent to Boeing, in Seattle, but a long-term solution would be to take on subcontracting

Lockheed's problems are shared widely by other aerospace companies heavily dependent on military orders. After the spendthrift defence budgets of the early Reagan years, relative austerity is being imposed by President Bush and Mr Dick Cheney, his new Defence Secretary.

One of the biggest losers so far, Northrop, is likely to be joined soon by Grumman. Northrop has had to accept a year's freeze on development of the B-2 Stealth bomber, partly because of budget constraints, but mostly because of continuing technical problems with the ultra-high technology aircraft. Once they fly, the bombers should be virtually invisible to radar; but, at more than $500m a piece, they are looming very large in the budget. The chances are high that the air-force will buy far fewer over a much longer time than Northrop had planned.

Grumman could be even worse off. The Pentagon is very close to deciding to cancel further production of its F-14 fighter aircraft, a move which would devastate the company and the area around its eastern Long Island plant.

Helicopter-makers were even harder hit by Mr Cheney. Of five major programmes in the Pentagon, he recently cancelled two, scaled back two more, and told the army it had to find money elsewhere in its budgets for the fifth.

The biggest helicopter cancellation was of the Bell-Boeing joint venture to build 600-to-700 tilt-wing V-22 Osprey aircraft at a cost of $26bn for the Marine Corp.

Although helicopter-makers are enjoying some revival of the civilian sector and are booking their best exports in years, they will not be able to compensate fully for the drastic military cuts.

In contrast, the general aviation sector is just beginning to pull out of a slump stretching back for some makers to the 1970s. Last year showed the first very modest increase in shipments of piston and jet engine aircraft for years.

Piper has the most remarkable recovery story. It shrank from 8,000 employees, in 1978, to 750 last year. But under the new private ownership of Mr Stuart Miller, it is bouncing back and will double its delivery of small prop planes to 600 next year.

Roderick Oram

Among new Soviet designs is Mriya — the world's largest aircraft

The dream has varied payloads

IN THE midst of a gathering economic crisis, one industry in Mr Mikhail Gorbachev's Soviet Union is investing and innovating against the trend: aerospace.

Against a background of drastic state spending cuts, and a big switch from heavy industry to the consumer sector, new projects are still coming off the designers' drawing boards.

Last November it was Buran, the Soviet reusable space shuttle, which showed off its paces with an unmanned flight into space, around the globe, and back to earth again on auto-pilot.

Then in December, the Oleg Antonov design team in Kiev launched the AN 225, or Mriya, the largest aircraft in the world, as the ultimate jumbo freighter. Capable of carrying 250 tonnes with a range of 4,500 kilometres, the Mriya makes all its rivals, like the C5 Galaxy, look like pygmies.

Last September, at Britain's Farnborough air show, it was the Soviet MiG 29 which made the biggest splash, showing off some spectacular aerobatics on its first official outing in the West, although it is several years since it went into service in the USSR.

And Soviet designers have been pressing ahead with test flights using liquid gases as fuel – first with liquid hydrogen, and most recently with liquid natural gas.

Yet the days when the industry enjoyed an absolute priority, along with the rest of defence-related production, are numbered. The space sector, in particular, already seems to be suffering budget cuts, and is certainly facing fierce criticism from a populace exhausted by the interminable shortages of more basic commodities.

The aerospace sector, like the rest of Soviet industry, is now supposed to be self-financing – in hard currency, as well as roubles. "With the defence cuts they are planning, the survival of some of these factories will depend on exports," according to one Western air attache. "I would be very surprised if they do not try to export more."

Yet the same Soviet diffidence about commercial prospects for their aircraft is true of Mriya's designer, too.

"There are no plans to export this aircraft," Mr Pyotr Balabuyev, chief designer of the Antonov design team, said in February. "It is required for our country. Maybe we shall build another one or two of this type."

His caution is somewhat belied by the fact that illustrations of the aircraft show it carrying a variety of interesting payloads – including not only the Buran shuttle, and the Soviet Energia rocket, but also the British Hotol aircraft, and major items of oil rigs and the like.

The Mriya makes all its rivals look like pygmies

The Mriya (its name means "dream" in Ukrainian) is a stretched version of the world's former largest aircraft, the Ruslan, or AN-124, which already carried up to 140 tonnes. With six massive engines on its drooping wings, and a splayed tail-plane to help carry loads piggy-back on top of the fuselage, its test flights show it to be surprisingly manoeuvrable.

It may be the last of its particular breed, however, for Mr Balabuyev admits that the chassis design, with 32 wheels, has reached the limit of its capacity.

Part of the logic for developing Mriya was undoubtedly the Soviet space programme: to provide some transportation for the rocket systems, and for Buran, from launchpad to landing site, or back for repairs.

However, the shuttle programme is itself now in some doubt. Articles in the Soviet press suggest a big debate about the future. "At present, Buran stands idle," Pravda, the Communist party newspaper, reported in January. In April, the paper again questioned the space programme, saying that "billions of roubles so vital to industry remain idle".

On the civil aviation front, there is still a lot in the pipeline. With Aeroflot, the world's largest airline, as its major customer, the industry has a huge guaranteed market. But it is having to battle with the major western suppliers to keep its dominance of eastern European customers like East Germany, Czechoslovakia and Poland.

Both the new Ilyushin 96 and the Tupolev 204 are due for delivery in the near future, although Aeroflot says they are already "one or two years behind schedule".

The IL-96-300 is a wide-bodied aircraft with much better fuel economy than the present IL-86, and a range of 11,000 kilometres. On the international market, it is expected to be powered by Rolls Royce engines.

As for the TU-204, it will become the new workhorse of the Aeroflot passenger fleet (the airline has 16,000 aircraft and 95,000 pilots and crew), coming into service in 1991. It will carry 50 passengers more than the present TU-154 – a total of 214 – but actually consume 50 per cent less fuel, according to Mr Alexei Tupolev, the designer.

That factor has suddenly, and belatedly, become a crucial issue for the Soviet industry. Jet fuel is severely rationed inside the country, to maximise Soviet oil exports, and Aeroflot itself has suddenly been asked to fly 4 per cent more passenger miles this year – with the same amount of fuel.

Quentin Peel

Japan will foot the bill for the FSX joint project, but will gain valuable experience from it

Partnerships policy is likely to continue

THE RECENT row between the US and Japan over the joint development of a military fighter aircraft, code-named the FSX, has highlighted the growing self-confidence of the Japanese aerospace industry.

The two countries now look set to go ahead with the project on terms that allow each side access to substantial areas of the other's technology, and give to the US 40 per cent of the development and production work on a plane that will be paid for entirely by Japan.

The Japanese aerospace industry will not be completely satisfied with the scheme, since contracting companies originally wanted to build the whole aircraft from scratch themselves. The industry was forced by the Government to accept a joint venture for the sake of Japan's relationship with the US. Nevertheless, Japanese aerospace companies stand to gain valuable experience from the FSX project.

US aerospace executives in Tokyo say Japan's aerospace still lags behind America's and Europe's in technology. But it has been held back from joining the front-rank, not mainly by a lack of technology but by a lack of markets. The domestic market, crucial to the development of key Japanese export industries such as cars and electronics, has so far proved too small to sustain a fully-fledged independent Japanese aerospace industry. The industry puts the estimated cost of entering into head-on competition with US makers, by producing a family of passenger jets, at around $30bn.

As a result, Japanese companies – led by the multi-divisional heavy industry groups, including Mitsubishi Heavy Industries, Ishikawajimaharima Heavy Industries, Kawasaki Heavy Industries and Fuji Heavy Industries – have instead relied on partnerships with foreign companies, almost all of them American, in both the military and civilian fields. They are likely to continue to do so – despite the argument over the FSX – because of the high costs of a large independent venture. Nevertheless, they are more likely than before to opt for independent development in smaller-scale projects.

Japan has produced planes from US designs since 1954, honing production engineering skills that are considered as good as any in the world. Boeing, the world's largest plane-maker, buys parts from 200 Japanese companies, including Mitsubishi, which makes fuselage and wing sections. It is a commonplace in the aircraft industry that F-15 planes, built under licence in Japan, are more reliable than the same aircraft made in the US. The Pentagon has sent out teams to Japan to learn about quality control.

Japanese companies have made no secret of their desire to make the leap from producing civilian planes under licence to independent development. The Ministry for International Trade and Industry said 20 years ago, in an industrial policy document, that aerospace would be a future pillar of the economy.

However, the ministry's ambitions have yet to be fulfilled. Japan independently developed a commercial aircraft in the 1960s – the YS-11, a 60-seater – but only 182 were sold. MITI has, since 1977, financed the development of a STOL – short take-off landing – plane, which completed test flights earlier this year but will not be put into production, mainly for lack of potential customers.

Japanese companies say it takes a long time for a newcomer to acquire enough credibility in the international market to make a commercial success of making civilian aircraft. So, for another 10 to 15 years, Japan is most unlikely to develop independently a large jet with 100-plus seats. It might be possible to build a smaller plane, but only if there was sales potential for it.

As a result, Japanese companies are concentrating on two areas – expanding joint development programmes and increasing the supply of components to foreign makers. Three groups – Kawasaki, Ishikawajimaharima and Fuji – belong to an international consortium to build the V2500, a jet engine for 150-seater planes. Also, Japan is a minority partner in a project to build a new Boeing, the 150-seater 7J7, and is separately looking for US and European companies to share the cost of developing a 75-seater, the YSX.

In each case, Japan's present and future partners are aware of Japan's track-record in capturing world markets from western companies. But so far this has not prevented them co-operating with Japanese companies out of fear of losing a technological lead. However, western companies are have been careful to keep the details of some of the most sensitive technology to themselves.

For example, in the V-2500 project, Japanese companies manufacture relatively low-tech parts, such as the low-pressure engine blades. The high-tech high-pressure blades come from Rolls-Royce. Engine technology is one of Japan's weakest areas in aerospace – the most powerful domestically-developed engine, produced by Ishikawajimaharima – has a thrust of 5,000 pounds against 25,000 pounds needed for a jet fighter and 60,000-plus for a jumbo jet.

This leaves component supply – the least glamorous but also the largest and most profitable part of Japan's civil aerospace industry. Boeing's widely-publicised order backlog has brought a surge of orders across the Pacific, stretching well into the 1990s. As the FSX project shows, Japan has developed advanced technologies in the fields of avionics and high-technology materials, including fibre-plastic composites.

Japanese engineers will then continue to dream of designing and developing their own machines from scratch. But their employers are certain to make sure that their energies are directed towards making improvements and modifications – sometimes radical, often not – to blue-prints drawn up elsewhere. That will be less exciting, but almost certainly more profitable

Stefan Wagstyl

GROWTH IN AIRCRAFT JAPANESE PRODUCTION

	Total (Ybn)	Military %	Domestic civilian %	Export %
1983	345.9	76	11	13*
1984	434.2	82	8	10
1985	543.4	85	7	8
1986	505.1	83	8	8
1987	540.5	80	11	9
1988	536.8	78	11	11

Source: MITI

Economic modernisation has forced plane-makers to be more profit-oriented, reports **Lynne Curry**, from Peking

China buys overseas but plans to become self-sufficient

FINANCIAL, bureaucratic and logistical obstacles are hindering China's efforts to upgrade its aircraft and aviation industry, say western analysts. The country is also being held back in its attempts to modernise and enlarge its fleets of civilian and military aircraft, air fields, air traffic control systems, communications networks, and radar and navigational equipment.

"The Chinese have a very big programme to update the whole system, but the scale of the problem is vast," says one western diplomat. "China is trying to do in 10 years what it has taken the US and Europe 50 years to accomplish. The problem ranges from bringing aircraft up to standard, right down to having enough taxis and baggage trolleys at Peking airport."

The country's economic modernisation drive has not only opened up the country to more air travel than ever before, but has forced both the civilian and military aircraft makers to become more profit-oriented. As a result, both sectors are seeking to develop more sophisticated planes in order to cope with the soaring volume of domestic and foreign air traffic.

"The Chinese are seeking to get whatever they can, from whoever they can, with the highest amount of technology," one aviation expert said.

In building up their aerospace industry, the Chinese have adopted a three-pronged approach, with plans to purchase more foreign aircraft, lease more planes, and produce their own.

Although the long-term goal is self sufficiency, the Chinese are buying foreign planes and making use of foreign assistance until their own industry catches up with international standards.

The Civil Aviation Authority of China (CAAC) is expanding its fleet by modernising and replacing its ageing Tridents and Soviet Ilyushins with newer aircraft.

Between now and 1998 CAAC is expected to purchase about 90 long-range aircraft, two-thirds of which are foreign. Most orders have been placed with Boeing and McDonnell Douglas.

In addition, Air China, the Peking-based airline of CAAC, is leasing Boeings, Tridents, and aircraft made by British Aerospace.

CAAC has also begun flying more combination passenger/freight planes and recently acquired a 747 freighter to cope with the dramatic increase in air cargo traffic.

"Aircraft manufacturers within China are taking steps to increase their capabilities," one aviation expert said. "But the manufacturers are not geared up. They don't have the technology to go into large-scale production of airplanes."

Most Chinese civilian aircraft are produced in the provincial capitals of Harbin, Xian, and Chengdu and are not long-range aircraft. The Y-12, a short take-off and landing transport plane, is one of the first to be mass-produced and sold abroad.

Many Chinese planes are based largely on Soviet models and do not incorporate modern technology and the higher productivity rates necessary to turn out airplanes in large quantities.

China's first move to acquire the technology for building modern planes on a large scale came with the establishment of a joint venture in Shanghai with McDonnell Douglas. The joint venture is making 25 MD-82s, to be divided between China Eastern Airline in Shanghai and China Northeastern Airline in Shenyang.

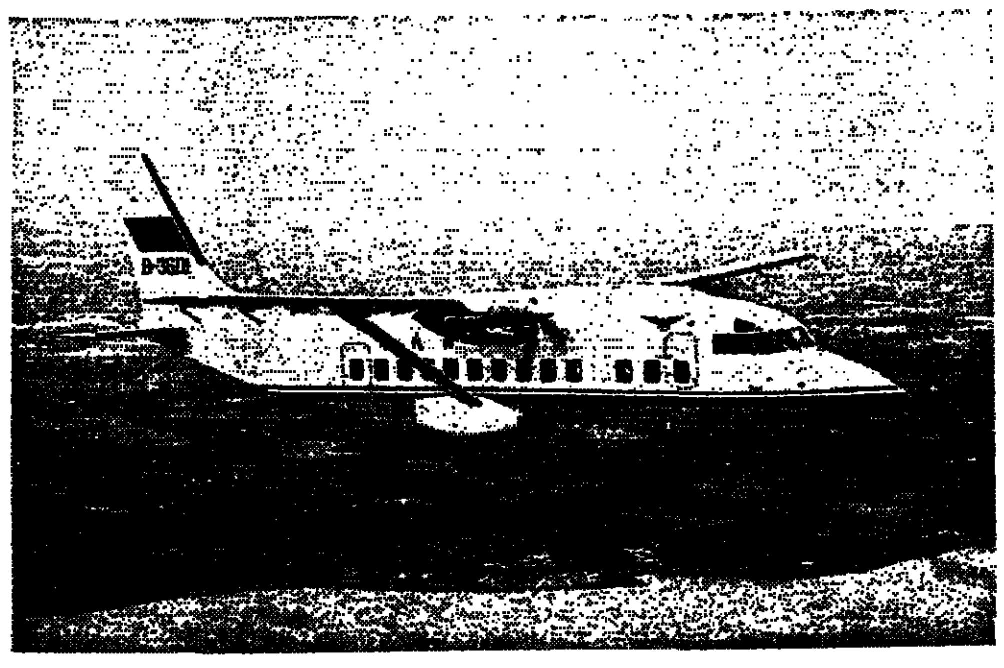
The Chinese are also seeking to develop a trunk liner programme: 160 to 200 passenger planes would be built in China to international standards with foreign assistance. McDonnell Douglas and Boeing are reportedly the main competitors for this project which is likely to produce a plane similar to the MD-80 or a Boeing 737 or 757. The Chinese are expected to make a decision this month about the kind of plane to be produced.

"If the Chinese invest in this, they will not be buying planes for their domestic fleet," one source said. "This is a big step towards becoming a modern industry."

The Chinese are also developing their support and maintenance systems and have signed joint venture agreements recently with Air China and Lufthansa to help modernise the maintenance and overhaul base at Peking's capital airport. The ultimate goal is to enable the Chinese to take over the bulk of the maintenance work that is currently subcontracted to other countries.

With the creation of three new companies to produce engines, components, and aircraft bodies, China is also attempting to manufacture aircraft equipment for the international market. Aviation experts said the Chinese should be able to break into the aircraft parts market, but are likely to find tough competition from Western engine makers.

The Chinese are already increasingly producing components for foreign aircraft companies. The Xian Aircraft Manufacturing Corporation makes tail fins for Boeing. According to the China Daily, the official English language newspaper, aircraft parts worth nearly $37m have been delivered to customers in Britain, the US, West Germany, France, Canada, Italy, and Sweden in the past three years.



The first of eight Shorts 360 36-seat airliners ordered by China's Civil Aviation Administration

But the civilian airlines are not the only ones attempting to expand and renovate their fleets. At the same time, the Chinese Air Force is also using foreign assistance to modernise its aircraft. As the Chinese have retired some of their older F-5 fighters, they have updated the F-7 with British avionics and sold it for export to other developing countries. The French and Italians are currently in a bidding war to win the contract to improve the A-5, a ground attack fighter. And the Americans are helping the Chinese to make the F-8, a high-level interceptor, into a more viable fighter.

The Chinese have an unusual policy of making the military pay for its own defence budget. This has led to a variety of money-making schemes. Aircraft factories often manufacture consumer goods in addition to parts for planes. The air force itself has begun operating commercial airlines for civilians and even charters Canadian-made Boeings to the international medical rescue group SOS.

Even so, the Chinese face serious problems. In many areas of communications their technology is decades old, and their understanding of technical concepts is limited. Quality control is not uniform and factories are unable consistently to turn out exact duplicates of aircraft components.

Difficulties have also arisen because the industry is comprised of planes, with often incompatible technical systems, made in both Western and Eastern European countries.

"The Chinese face the terrible problem of introducing a 1989 airline system into a country which is 30 to 40 years behind," one diplomat said. "Even if they buy more planes, they can't handle them."

WEST GERMANY

Daimler waits for takeover to be cleared

THE WEST German aerospace industry stands at a crossroads. The country's partners in the US and the rest of Europe are watching with a mixture of interest and trepidation, to see what direction it will take.

The proposed takeover of Messerschmitt-Bölkow-Blohm (MBB), the largest West German aerospace group, by Daimler-Benz, the motor and engineering conglomerate, would drastically change the industry's competitive position for the 1990s and beyond.

It would enable West Germany to take a bigger role in co-operative aerospace projects which, up to now, have been led almost automatically by Britain or France. This applies to ventures such as the Airbus, the European Fighter Aircraft (EFA), the Franco-German anti-tank helicopter and avionics collaboration in areas such as radar. Mr Edzard Reuter, the Daimler chairman, and mastermind of its diversification strategy, has spoken of Daimler-Benz challenging British Aerospace for leadership in the electronics systems field, for example in the EFA.

The takeover of MBB would give West Germany a bigger role in co-operative aerospace projects which, up to now, have been led by Britain or France

The Daimler-MBB deal must still be spoken about in the conditional because the Bonn government is in the throes of deciding whether it can go through. The Federal Cartel Office ruled in April that the takeover would give Daimler a market-dominating position in armaments. In view of MBB's activities in other high technology sectors such as transport, the Cartel Office also voiced unease about the likely increase in Daimler's economic might in civilian areas. This applies particularly to the concentration of government research and development funds which would be put at the Stuttgart-based company's disposal.

The takeover, which has been discussed for more than two years, has whipped up a political squall both within and outside Chancellor Helmut Kohl's beleaguered centre-Right coalition. However, assuming Mr Helmut Haussmann, the economics minister, in the autumn decides to overrule the Cartel Office's objections, Daimler-Benz would become one of the world's largest and most diversified defence technology concerns.

Daimler-Benz, which in recent weeks has stepped up lobbying and public campaigning in favour of the deal, has already taken a step towards preparing to digest MBB.

Mr Reuter points out it was the Government's idea in the first place for Daimler to take over the industrial reins at MBB to rationalise West Germany's participation in Airbus.

And the Daimler chief has launched a strong attack on Bonn's foot-dragging over the transaction. He implies that this is adding to uncertainties abroad over the Federal Republic's entire posture on defence and Nato. Doubts about Bonn's commitment to military ventures have arisen as a result of parliamentary opposition to the EFA project. Sales abroad of the Anglo-German-Italian Tornado aircraft have also fallen foul of political squabbling.

In May, Daimler set up as an operating subsidiary Deutsche Aerospace, a company with initial turnover of DM7bn (£2.2bn), to group its existing activities in the aerospace and defence fields.

These centre on the aero-engine manufacturer Motoren-und Turbinen-Union (MTU), the electronic systems operations of the AEG electrical group, and the Dornier aerospace company, the smaller rival to MBB. If the Bonn government overcomes the political hurdles and approves the MBB acquisition, the Ottobrunn-based group will be added to Deutsche Aerospace – and the subsidiary's turnover will double to around DM14bn.

Daimler has three aims. It wants to consolidate the MTU, Dornier and AEG operations brought under the Daimler wing in 1985. The company has discovered that these are too small and fragmented to give Daimler overall international clout in this area.

Mr Reuter wants to secure the motor group's future as a broad based high technology concern. Aerospace will offset a likely levelling-off in Daimler's cars and trucks business in coming years – and will also, according to Mr Reuter, provide important technological "synergy" for the rest of the group's activities.

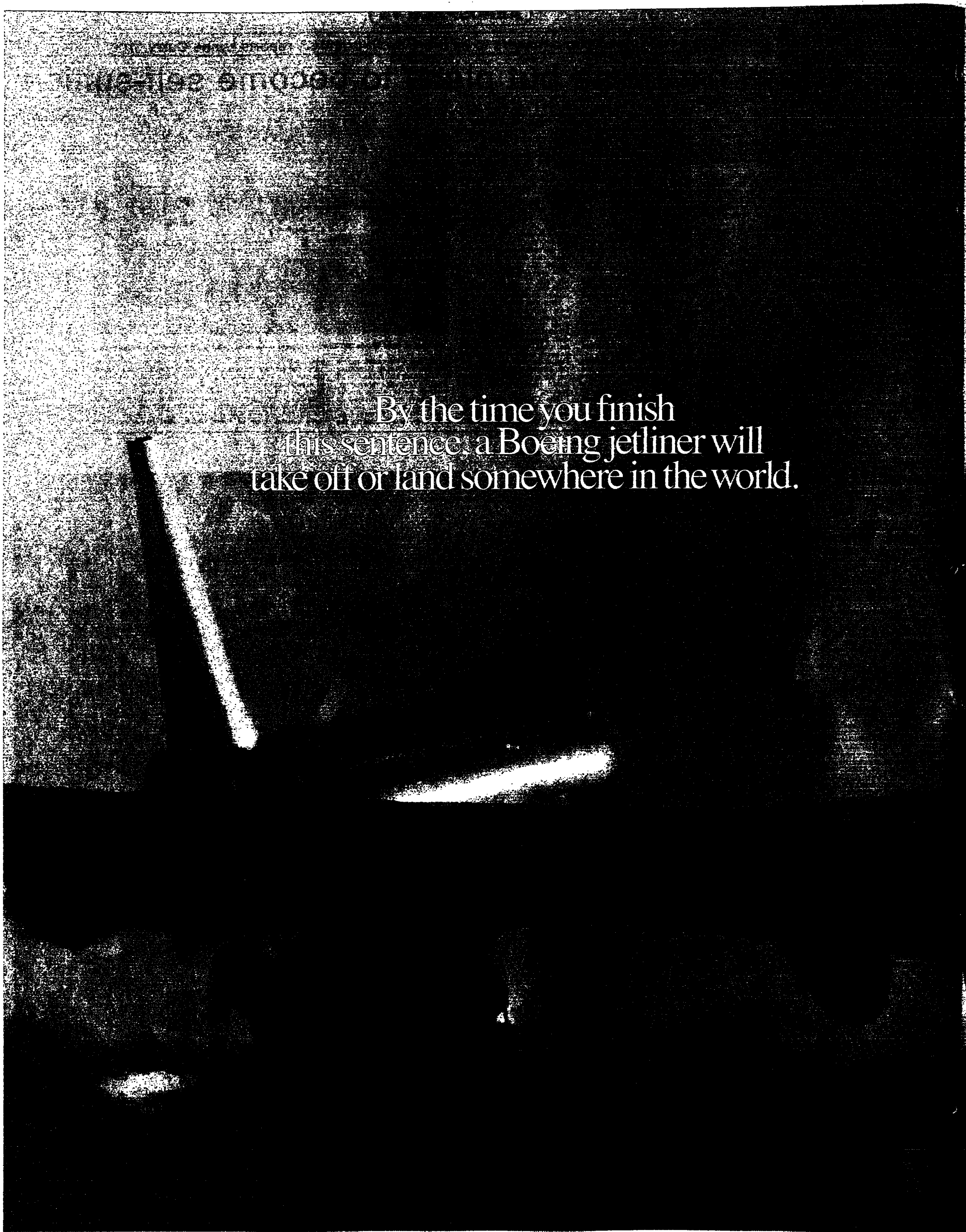
Lastly, Mr Reuter argues persuasively that only a group run on private sector principles can make a success of the Airbus venture, in which West Germany, through MBB, has a 37.9 per cent stake. MBB, at present majority owned by three West German states, has a reputation for sound technology but chaotic management. It is badly under-capitalised by international standards.

With no shortage of cash, and protected from unfavourable share price developments by the Deutsche Bank, which owns 28 per cent of its equity, Daimler-Benz is talking of injecting DM5bn into the capital resources of Deutsche Aerospace. Mr Reuter says putting Daimler's aerospace activities on to a sound footing could take five years.

British Aerospace and Aerospatiale say they welcome – at least for the moment – the prospect of a stronger German aerospace industry emerging under the Daimler wing. They believe this will help the European industry stand up to the US in worldwide competition.

A Daimler motor, defence and aerospace conglomerate with a turnover of more than DM80bn will be in the business not only of co-operating with the rest of Europe – but also, potentially, of competing against it. Particularly in France, whose own aerospace industry is suffering from fragmentation, the Daimler deal could provide a powerful reason for restructuring in coming years.

David Marsh



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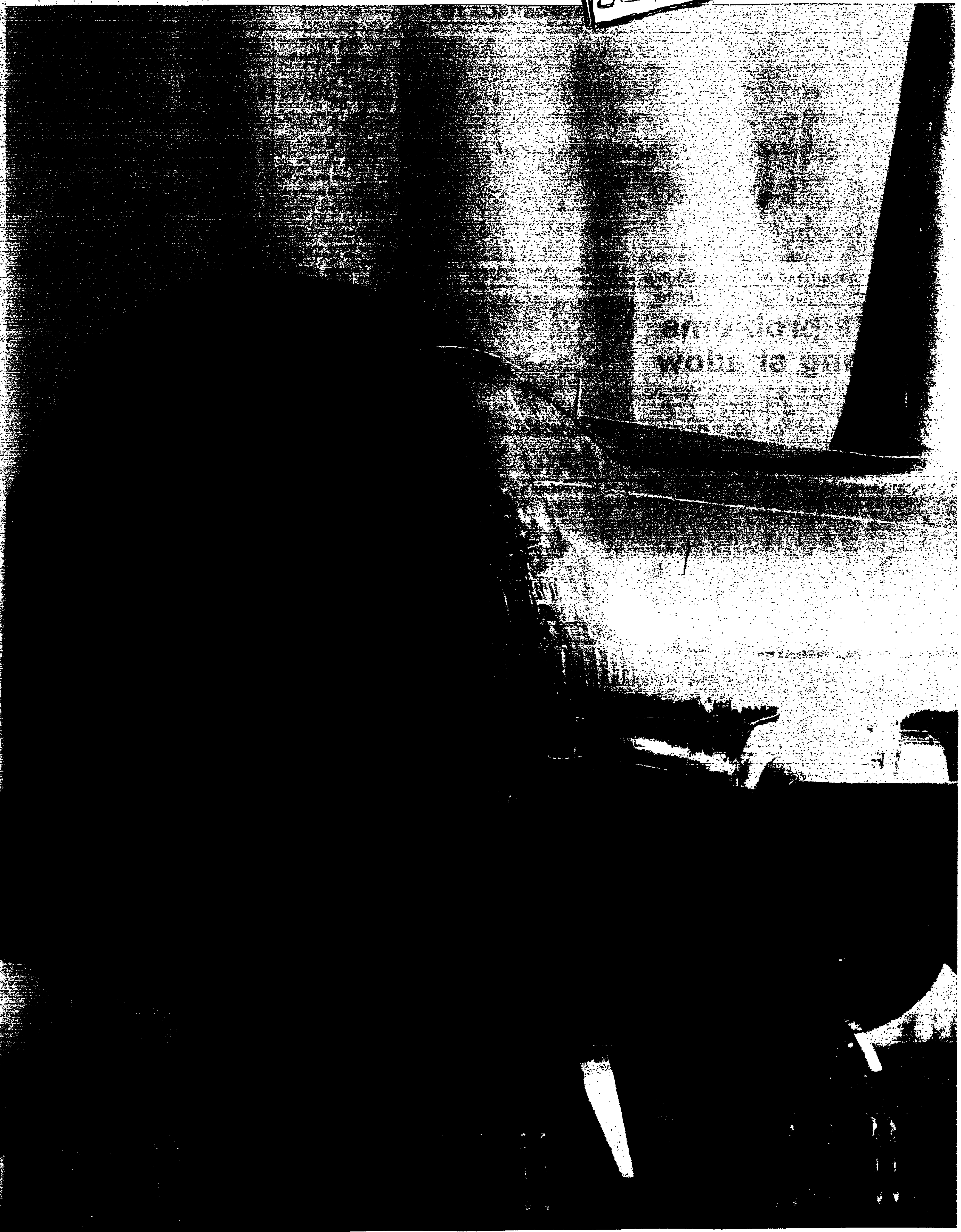

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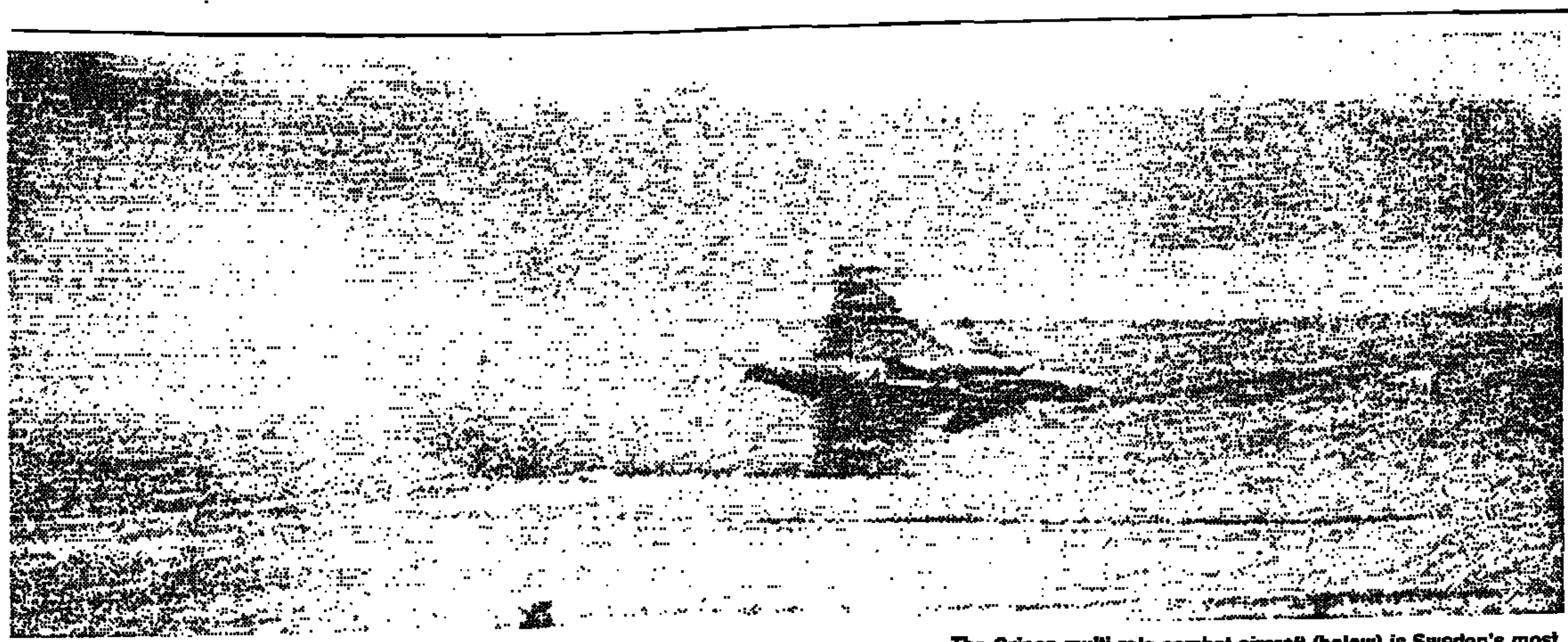
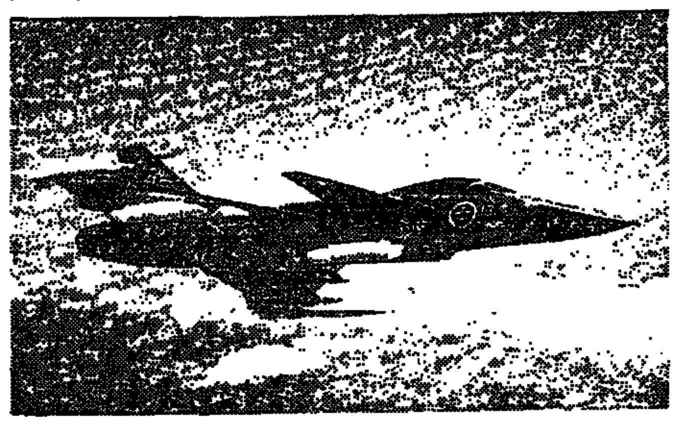


Sweden's new combat aircraft is in deep trouble but prospects on the civilian side look brighter

Fighter's problems cast a long shadow



The Gripen multi-role combat aircraft (below) is Sweden's most ambitious defence project — but its crash on a test flight (above) was the latest in a depressing series of setbacks

THE SWEDISH aerospace industry, based on Saab-Scania, is going through a difficult time. As the company's president Mr George Karnsund told its annual meeting at the end of April, operations in the aircraft division are at present characterised by a measure of uncertainty.

The crash in February, during a test flight, of the JAS39 *Gripen multi-role combat aircraft* has worsened Saab-Scania's troubles. The Gripen is Sweden's biggest and most ambitious defence project, and it has aroused widespread national controversy since its inception. It is being built by a consortium made up of Saab-Scania along with Volvo Flygmotor, Ericsson Radar Electronics and FFV Aerotech.

What happened in February was simply the latest chapter *in the depressing story* of an aircraft already a year and a half behind schedule, due mainly to the problem of the software in its advanced fly-by-wire flight control system.

An official inquiry into the accident has yet to report, but preliminary findings suggest a structural fault. The project is faced with an escalating budget that already totals more than SKr42bn (£3.9bn), and this looks likely to increase.

The JAS consortium is seeking an extra SKr7bn to cover delivery of the second batch of 110 planes scheduled to be ready by 1993 to 1995. However, there now seems little likelihood that the first JAS39 Gripen will become operational by the planned date of 1992.

The Swedish air force still has an order for 30 of the new planes, with an option for a further 110 to be delivered by the end of the century. However, there are genuine differences of view about the Gripen project within the Swedish defence establishment, especially as the rising cost has put added pressure on the budget and means that the needs of the army and the navy are not receiving the high priority many would like to see. The Gripen won't actually make a profit until at least 300 of the planes have been built and sold. There are officials in the Ministry of Defence who have *raised the possibility of buying* a foreign alternative to Gripen, notably the American F-16.

However, the future of the plane is vital to the credibility of Sweden as an armed neutral country that can remain relatively self-sufficient in its defence requirements. The cancellation of Gripen would inflict irreparable damage on the whole industry, which is why such a decision still seems unlikely to be taken except as a last resort. Indeed, it would spell the end of Saab-Scania's entire aircraft production, for the company has made it very clear that the future of its civilian aerospace activities are closely linked to the military side.

For its part, the consortium remains hopeful that the Gripen will eventually find a profitable market beyond Sweden, among smaller countries who would find such a light, versatile and easily maintained plane ideal for their defence needs. A number – including Austria, Finland, Norway, Denmark and Switzerland – have expressed an interest in the Gripen in the recent past, though the delays and the crash may well make the Gripen *look a less attractive buy* for them.

In addition, the export opportunities appear to have been thwarted until now, because of the lack of a decision from the Swedish Government in giving the go-ahead for the development of a *two-seat trainer* version, the JAS-39B, which might find a more lucrative market overseas.

On the civilian side of the business, the outlook looks rather more promising for the Swedish aerospace industry. *Saab-Scania remains the leader* in Europe in the medium-sized aircraft market with its 340, which also has a strong competitive position in the US.

The company claims to have 30 per cent of the world market in that particular aircraft class alongside Embraer, the Brazilian company, and De Havilland of Canada. Today, Saab 340s fly with as many as 28 operators across the world. It has certainly proved to be a great success, and with annual sales now totalling about SKr2bn, is one of Sweden's largest single export products.

Last year, the company delivered 28 of the turboprop airliners and took orders for 45. Saab-Scania has been manufacturing the two-engine propeller plane with room for 35 passengers since 1984, with a 340B version which has a more powerful General Electric CTD-9 engine coming into operation two years ago.

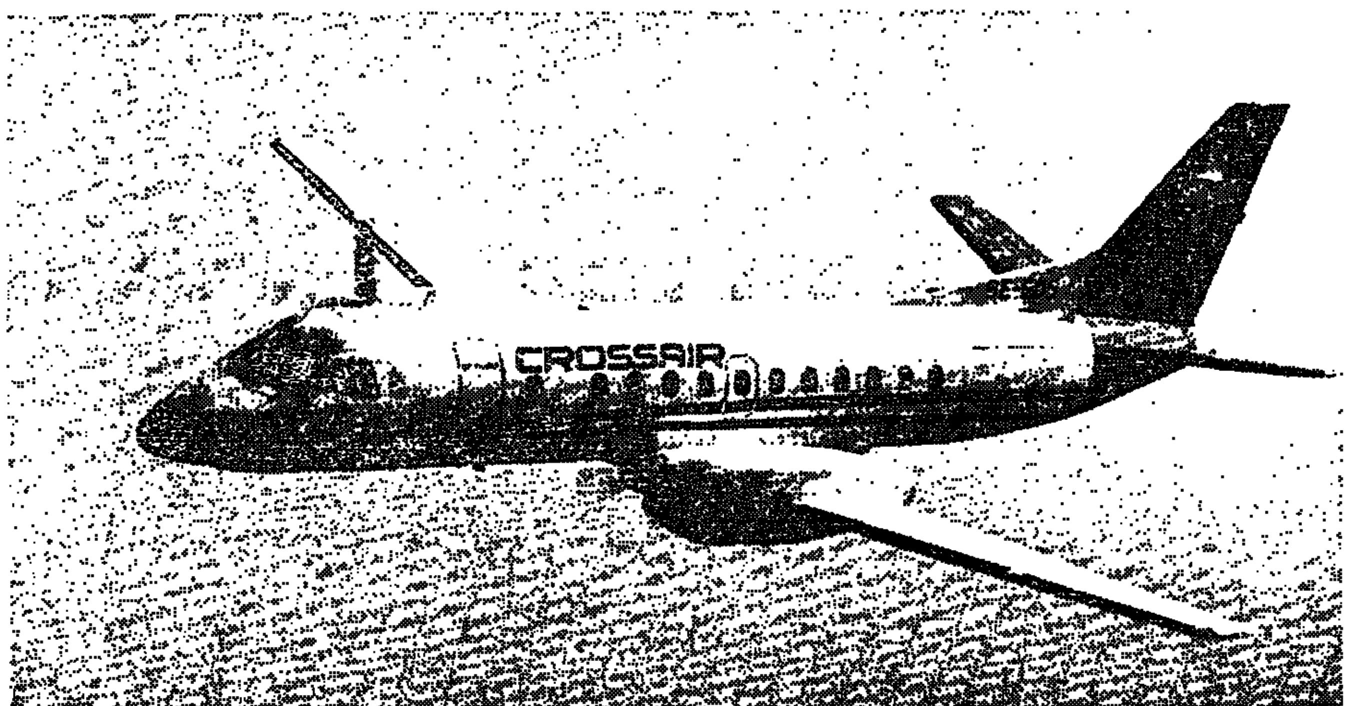
In April, the company announced that the Swiss company Crossair had agreed to buy a further five Saab 340Bs, on top of its original order for 24, with delivery next year. Last month American Eagle, the regional partner of American Airlines, agreed to buy 100 Saab 340Bs over the next few years, at a cost of SKr8bn. At the end of last year, the company revealed that it wanted to *manufacture* a larger 50-seat passenger version, to be known as the Saab 2000, with a speed of 650kph and a range of 1,800 km. The project is expected to cost around SKr3bn, and the company is seeking substantial government financial support for it before going ahead.

The future of the industry is in the hands of politicians

The 2000 has already attracted some interest. Crossair, continuing to display its confidence in Saab-Scania, has placed an order for 25 of the new planes, with an option for a further 25, the cost of which should cover the whole project's spending programme. American Eagle have also announced an option for buying 50 of the 2000. The first 2000s can be expected by 1993, if all goes to plan.

Analysts at Kleinwort Benson, in London, and Svenska *Handelsbanken* both believe that the company's aircraft division will make a profit this year, despite the Gripen problem, because of the fact that the 340 is now selling well and its development costs are now behind it. But the longer term remains problematic. Indeed, the future of the Swedish aerospace industry is now very much in the hands of the politicians.

Robert Taylor



The Saab 340, used by 28 operators worldwide: Crossair, the Swiss airline has added five to an original order for 24

Italian product development is healthy, but exports have slipped

A dynamic industry in need of a more coherent policy

THE 70 or so companies involved in the Italian aerospace industry are looking back on the 1980s as a decade of very mixed fortunes.

On the one hand, the industry has shown considerable dynamism in product development and the forging of international collaborations in both the civil and the military sectors. On the other, companies are struggling to hold their shares of export markets and increasingly bemoaning the absence of a coherent govern*ment policy for the sector.*

The industry has been constantly pleading for stronger government support for its export efforts, which it feels lack the official commercial backing which many other national industries enjoy. At the same time, many companies feel that their exports are now being impeded by tighter licensing procedures, which have outlawed Italian exports at a time when international markets are, in any case, contracting.

Although industry-wide figures are not yet available, results from two of the sector's key companies suggest that 1988 may have been somewhat better than the year before. State-owned Aeritalia, Italy's largest aerospace company, reported a 35 per cent increase in net profits to L68bn (£30m) on a slender 4 per cent rise in sales to L1,655bn. Its order book swelled significantly by 55 per cent to a total value of *L4,525bn.*

Selenia-Elsag, which specialises in electronic systems, has also reported some strong figures, with a net profit of L12.3bn, compared with L3.4bn in 1987, on a little changed turnover of L1,550bn. Some L2,298bn of new orders produced a net L678bn rise in its order book, of which foreign demand represents 31 per cent compared with 14 per cent the year before.

If this performance reflects a general trend in the industry, then there is a possibility of a revival in Italian aerospace exports. Since they peaked at 70.5 per cent of sales in 1981, they have gradually slipped back to only 42.6 per cent in 1987. The *total* export sales of L2,300bn in that year was identical to the year before, while aerospace imports rose from L860bn to L1,000bn. Aircraft sales of L1,180bn established this sector as far and away the largest export earner, followed by engines (L420bn), general equipment (L400bn) and space and missile products (L300bn).

Aircraft also accounted for the largest slice (L1,460bn) of the industry's L3,100bn of domestic sales, followed by missiles and space (L630bn), equipment (L560bn) and engines (L450bn).

A major constraint on the domestic front has been the relative stability of national defence spending, which in 1983 *took its largest share this* decade of total government spending, and has since fallen from 4.26 per cent of total outlays to 4.12 per cent in 1988. At 2.1 per cent of gross domestic product in 1987, Italian defence spending is one of the lowest *proportions* in Nato, having fallen from a peak of 2.5 per cent in 1981-83.

Research and development spending, meanwhile, accounted for nearly one third of the industry's total investment of L540bn in 1987 – an outlay that was significantly higher than the L395bn registered in 1986.

Italian companies' collaboration with foreign partners covers most aspects of civil and military activity, from Aeritalia's supply of wing and fuselage sections for the McDonnell Douglas MD 11 and the Boeing 767 to Agusta's participation in an advanced military helicopter project with British, Spanish and Dutch companies. Italy *is also involved in a variety of* European space projects, including Colombus, Hermes and Ariane.

Development projects under way include Aeritalia's work on advanced composite materials and navigational systems for unmanned aircraft; the development of a new turboprop engine at Alfa Avio; and the development of a new missile defence system, which Selenia is working on with the French companies Aerospatiale and Thomson-CSF.

John Wyles

Construcciones Aeronauticas, of Spain, is moving against the tide of private investment

State cash helps climb into profit

SPANISH aerospace company Construcciones Aeronauticas SA (Casa), now at the halfway stage in its climb back into profits, is reviewing the advantages and disadvantages of possible future international partnerships.

Like many Spanish companies, Casa is boosting its pro*ductivity, reducing* labour costs and restructuring its debts to secure a better financial footing. Unlike any other public company in Spain, however, Casa is at present running against the privatisation grain; it is holding foreign investors at bay and is increasing state ownership.

Under a current capital increase the Instituto Nacional de Industria (INI), the Spanish state holding conglomerate, is set to increase its equity in Casa from 73 per cent to 88 per cent. Northrop of the US, which at one point held 13.2 per cent of Casa, will pull out of the Spanish company leaving Messerschmitt-Bolkow-Blohm, of West Germany, the sole minority shareholder, with an 11 per cent stake.

The strategy of public sector support suggests some bullishness about the company's prospects

The change in the share ownership appears to be a temporary one. The thinking at Casa and at INI is that it is preferable at this key stage in *the company's return to profit*ability to shore up the public sector participation with a view to selling part of it back advantageously when Casa is back in the black.

Such a strategy suggests a determined bullishness about *the company's short and mid*-term prospects and, judging by the results of last year, the optimism is not misplaced. Dornier, of West Germany, and Aerospatiale, of France, certainly thought as much, for they were among the European companies that unsuccessfully approached Casa with a view to acquiring Northrop's holding.

Chief executive Javier Alvarez Vara reckons that at the halfway stage of a three-year viability plan Casa is "slightly ahead" of the targets it set itself. The company reduced its losses in 1988 by 53 per cent to Pta6.3bn (£30m) and it experienced a 60 per cent increase in sales per employee. This year the aim is to break even, in order to declare profits in 1990.

*The completion of the recov*ery programme will signal, according to Mr Alvarez Vara, another change in the share ownership for he says INI does not "have a vocation" to own so much of the company.

One option that has been aired in the Spanish press is that part of Casa could be publicly floated. The alternative is to invite in the sort of aerospace companies that have been recently rejected and to return to the traditional Casa share structure, which allowed for up to 25 per cent of the company's equity to be held by foreign partners.

Mr Alvarez Vara, an aeronautical engineer whose youth belies a long experience in INI's top management echelons, would prefer a wide shareholding base and no significant foreign partners. "It is neither necessary nor advisable," he says, "to come under under an international company orbit. We have our own niche in the market."

Meanwhile the main obstacle to a clear recovery is the exchange rate. Casa, which has 70 per cent of its income in dollars and 70 per cent of its costs in pesetas, is one of the Spanish companies that finds itself most exposed to currency fluctuations.

There is less concern about the future of Casa's main prod*uct, the versatile CN-235 jet, a* plane which in its military and civilian versions can transport 44 passengers or five tonnes of cargo. The aircraft is the successor to Casa's highly successful C-212 aviocar, the short take-off and landing aircraft that is known as the jeep with wings.

The other main prop of Casa's operations is its participation in the Airbus and European Fighter Aircraft programmes. All in all what Mr Alvarez Vara calls "strictly *plane activity", meaning the* company's own product line, its participation in pan-European projects and its manufacture of components, such as wing flaps for Boeing on a subcontract basis, accounts for 80 per cent of Casa's income.

Breaking down this 80 per cent "plane activity" income, 40 per cent comes from the collaboration projects against 30 per cent from Casa's own products and 10 per cent from subcontracting. The remaining 20 per cent of the company's income is largely accounted for by maintenance work for the US air force in Europe and, to a lesser extent, for the Spanish air force.

The main obstacle to a clear recovery is the exchange rate. There is less concern about the product

Mr Alvarez Vara says that although Casa is a small to medium company in a medium-sized country, its strength is that it is the most aerospace-minded of all the aerospace companies, for it is wholly devoted to the sector. Such limitations are "not necessarily a disadvantage" according to Casa's chief executive.

Indeed the Spanish company's specialisation, its prospective financial turnabout and its presence in Euro-projects, amounts to a tempting package for foreign wooers. Mr Alvarez Vara's go-it-alone personal preferences are likely to be sorely tested.

Tom Burns

Fokker's management faces some important decisions about the company's future, says **Laura Raun**, in Amsterdam

Possible purchase of Shorts is most immediate concern

FOKKER OF the Netherlands is racing toward a crucial turning point. Looming ahead are vital decisions about a major acquisition, production expansion, an enlarged "family" of airplanes, and company management.

These decisions could determine whether the Dutch aerospace company survives as a world-class aircraft manufacturer, or is relegated to a parts-maker for others. "For Fokker, the year 1988 was characterised by scale enlargement that was important in many respects," according to the recently published annual report.

A dramatic turn around has followed the 1987 bail-out

Fokker has staged a dramatic turn-around from heavy losses and a financial bail-out in 1987. The bail-out, arranged by the Dutch Government and commercial banks, gave 32 per cent of Fokker to the State, which demanded that the company find an international partner to strengthen its resources.

Founded in 1919, Fokker specialises in short- to medium-haul airliners; its flagships are the 50-seat Fokker 50 turboprop and the 100-seat Fokker 100 twin-jet. With earnings of Fl 13.3m (£3.7m) on sales of Fl 2.05bn in 1988, it is one of only five civilian jet manufacturers in the western world. The Schiphol-based company boasts of a record order-book at the moment. It has 187 firm orders and 175 options for the Fokker 100 and 98 firm orders and 32 options for the Fokker 50.

Mr Erik Nederkoorn, a member of the management board, believes that developing new aircraft is more important than being completely independent. Fokker is aiming to spawn a "family" of aircraft around the Fokker 50 and Fokker 100.

Of most immediate concern is the possible acquisition of Short Brothers, the Northern Ireland aerospace company that makes wings for the Fokker 100. Fokker and Britain's General Electric Company have jointly bid for Shorts, which is owned by the UK Government and is being privatised.

But Fokker has increasingly played down its chances of winning Shorts, saying that another wing supplier would still be needed even if London gave the nod. British Aerospace is believed to be a front runner as a second supplier of F-100 wings.

Fokker's designs on Shorts were described initially as a defensive move, intended to ensure a steady wing supply. Shorts also was viewed as a solution to the problem of additional production capacity. Fokker urgently needs to step up production of both planes in order to meet delivery deadlines and restore credibility following persistent delays.

More recently, Mr Nederkoorn has claimed that no final assembly – only parts manufacturing – would be done at Shorts. He said less than half of Shorts' 7,600 jobs would be guaranteed – virtually ignoring London's demand that jobs be kept at Shorts, one of Northern Ireland's biggest employers.

Expanding production capacity thus remains a pressing problem, even if Shorts is acquired. Bad delays contributed to Fokker's hefty Fl 107m loss in 1987, and deadlines were missed again last year. Only 11 Fokker 100s (and 31 Fokker 50s) were delivered in 1988.

Plans are dramatically to accelerate the Fokker 100 production tempo, so that 33 can be delivered this year. That will be stepped up to 46 by 1991.

Two options under consideration for enlarging manufacturing capacity are: to add a second production line at Schiphol; or to manufacture in the US in co-operation with an American company. Lockheed, Rockwell or Grumman is most likely, and could be cheaper than the Fl 200m for another production line at Schiphol.

A new family of aeroplanes also is under consideration, because the pair of F-50 and F-100 craft are "too small a basis," Mr Nederkoorn explains. A decision is expected by late summer on a stretched version of the Fokker 50 with 70 seats.

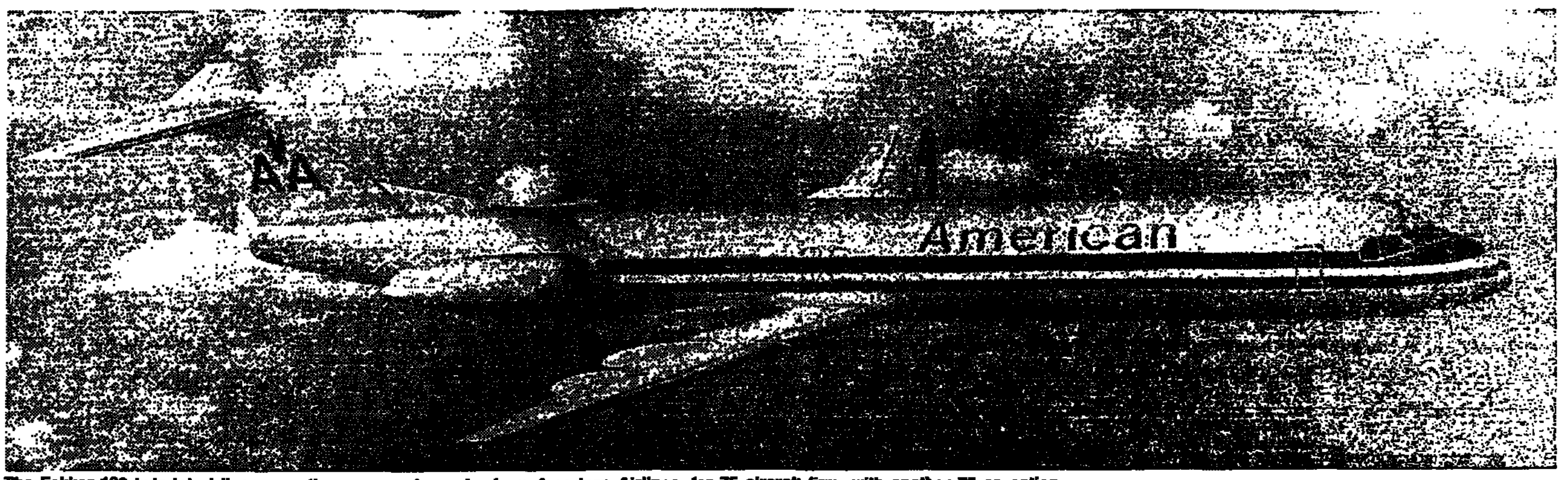
By next year, a decision should be made on whether to make a stretched Fokker 100 with 130 seats. Since this would compete head-on with giant American aerospace companies, sufficient market demand is essential. Corporate financing will come from either the Dutch Government or private capital markets, or from both. Fokker tapped the international equity market twice last year, but feels confident enough to talk of a third issue.

Finally, company management needs to sorted out soon. A new chairman must be named to succeed Mr Frans Swarttouw, who retired on

A new family of aeroplanes is also under consideration

June 1. The board of management was supposed to be expanded to four members from the current three under the 1987 bail-out, but no moves have yet been made. A supervisory board vacancy also must be filled.

Fokker is clearly optimistic about the future, predicting higher earnings for this year. Mr Nederkoor believes the company can grab as much as 30 per cent of the market for 100-seat airplanes. "The market is not going away," he notes. "There is still big interest from mega-carriers in the US."



The Fokker 100 twin-jet airliner recently won a major order from American Airlines, for 75 aircraft firm, with another 75 on option

BRAZIL

Sell-off welcomed

SKY-HIGH inflation rates and a swelling government budget deficit have still not managed to ground the ambitions of the Brazilian aerospace industry.

But the international successes of Embraer, the state-owned planemaker, cannot conceal the domestic economic crisis that is hindering the company as it tries to build and consolidate niches in the air-force trainer and smaller civil commuter sectors.

Last year, an annual inflation rate near to 1,000 per cent and the cost of servicing the company's heavy short-term debts led to a loss of $30m despite rising sales of $524m.

That situation was radically revised for the better last month, with a $150m three-phase loan from the national development bank, BNDES. In addition, Embraer has been authorised to sell a $100m stake in the company to overseas investors through conversions of Brazil's foreign debt into equity.

While a privatisation programme has long been officially in place, the permission to sell a part of a successful state-sector company involved in military work is a new and welcome precedent for the country. Embraer has been told by First Boston, the bank behind the deal, that those queuing for a stake have already over-subscribed the total available.

In consequence, its plans to develop the CBA-123, a radical new pressurised 19-seater turboprop, intended to replace the Bandeirante, can go ahead smoothly. Selling options in the plane, which incorporates rear-facing "prop-push" engines and is being developed jointly with Argentina, will be one of Embraer's main objectives at Le Bourget.

Mr Ozilio Silva, the managing director, says that, though the market is highly competitive, several $25,000 options are only awaiting signature, and that there has been considerable interest since the marketing of the plane began at the company's Fort Lauderdale subsidiary last year.

Potential sales for this class of small commuter are estimated at up to 2,000 by the year 2005, and the company wants to hold at least 30 per cent of the international market shared by British Aerospace's Jetstream and Fairchild of the US.

Also under discussion at the company's impressive headquarters in Sao Jose dos Campos, in Sao Paulo state, is a project to stretch the popular 30-seat Brasilia commuter carrier. Already 135 are in operation with 18 companies worldwide, with a total of 416 options or sales confirmed at a price of about $7m each.

The stretched version would aim to raise passenger capacity to 45, taking it into direct competition with De Havilland of Canada's Dash 8 among others. Embraer believes that client loyalty and ease of maintenance for existing customers will guarantee it a good slice of the market.

Meanwhile, the company is continuing to build on the success of the two-seat Tucano air-force turbo-prop trainer. With 633 already sold to 10 overseas customers, including the UK's Royal Air Force, the next big contract is hoped to be France. Negotiations with Paris are under way for 85 Tucanos, and should be closed by the end of the year.

Discussions have also begun about producing a revised, more powerful version, with a 1,100 shaft hp engine, along the lines of that being made under licence by Shorts.Embraer's major $1bn joint venture project – the AMX surface attack jet, being built in conjunction with Aeritalia and Aermacchi – is nearing completion, with the first six planes already operating in Italy.

The Brazilian air-force, which has a 30 per cent stake in the 300-unit project, should take delivery of the first of its 80 shortly.

Over the next decade, Mr Silva's hopes for his company are: annual sales rising to between $1.5bn and $2bn, and consolidation in its current sectors. But he is cautious about any full privatisation of the company. "The idea has its merits and demerits," he observes, "but what we need first is much less government interference."

A few hundred metres from Embraer, Avibras – a private-sector arms and technology company – let leak last month that it is planning to use the Paris Air Show to unveil a major new commercial tie-up with China on satellite technology. Brazil has already signed a $150m deal, in which the two countries will build up to five low-orbit remote sensoring units, using Chinese Long March 2 launchers and Brazilian ground stations.

Avibras, together with the Great Wall Industry Corporation, controlled by Beijing's air ministry, are now to open commercial offices in London, to market satellite services and equipment to other countries.

Ivo Dawnay


President-elect Carlos Menem: the scene is further muddied by the success of the Peronist party in last month's elections

ARGENTINA

Aerolineas' high-risk look

TWO MAJOR deals, which last year promised to lift Argentina's aerospace and air transport industry out of its doldrums, have disappeared into oblivion, unlikely to surface for some time.

The most immediately important was the collapse of a planned sale of 40 per cent of the state-owned civil airline, Aerolineas Argentinas, to Scandinavian Airlines Systems.

Aerolineas has been running at a loss for many years, and Argentina's departing Radical party government, under President Raul Alfonsin, had hoped to bring off a sale which would have improved the company's performance. The deal was set up by Mr Rodolfo Terragno, who as public works minister is in overall charge of state-run enterprises.

The Aerolineas sale was intended to be the flagship for sales of other loss-making public companies, which in 1988 registered a total daily loss of $8.5m. Aerolineas is one of the better-run nationalised companies, and it was widely regarded as the easiest company to sell, given its relatively small scale and the increasingly internationally competitive airline market.

SAS was keen, but the deal fell through amid some scandal which has yet to be fully clarified. According to Mr Terragno, SAS was prepared to have paid $204m for Aerolineas, which has a fleet of 33 craft and a staff of 10,000. However, Mr Horacio Domingorena, the then president of Aerolineas, accused Mr Terragno of lying about the deal when it was finally unveiled on August 11 last year.

Mr Domingorana said that,

The semi-privatisation is embroiled in political struggles

under the terms of the deal, SAS would in fact pay $156m, underpricing the company in his estimation. Political squabbles then broke out, with the opposition Peronist party refusing to sanction the deal, which was presented to Congress as required by law by Mr Terragno.

On December 15, when it was clear that the Peronist-dominated Senate was prepared to reject the deal, Mr Terragno withdrew it and said that he would call for new international bids for Aerolineas in 1989. So far that has not yet come to pass.

The scene is further muddied by the success of the Peronist party in presidential and legislative elections held on May 14. Argentina will have a new Peronist president in December, Mr Carlos Menem. His brother, Mr Eduardo Menem, led the fight in Argentina's Senate against the Aerolineas SAS deal.

While the semi-privatisation of Aerolineas is thus embroiled in political struggles, it will inevitably be seen as a high-risk venture for anyone wishing to follow in SAS's footsteps.

Argentina's other major venture – this time in military aviation – has also dashed initial optimism for profitable international sales. A jet trainer known as the IA-63 Pampa, under development since 1979, has so far failed to attract any buyers, despite being heavily pushed in markets as disparate as the Middle East, Latin America and the US.

The Argentine defence ministry is still waiting for a US response, following test flights of the Pampa in the US last autumn. US pilots described the aircraft as being an excellent all-round trainer. Following such praise, Argentina hopes that it would soon see purchase orders for as many as 600 of the aircraft, which at $3.5m each would have reaped the country in excess of $2bn. The project envisaged the manufacture of parts for the Pampa in Argentina, and assembly in the US.

But American interest has petered out, and Argentina is now left with an apparently useful military trainer, which it cannot sell overseas. In the US, the Pampa is up against stiff competition, including the British Hawk, the Italian MB-339 Aeromacchi, the Caza 101 from Spain, and the Dornier Alpha Jet, a Franco-German production.

Early this year, Mr Horacio Juanarena, defence minister, paid a visit to Israel in an attempt to interest Israel in a deal involving part sale, part exchange of the Pampa for Mirage and Skyhawk fighters. Argentina is keen to get hold of several A-4 Skyhawks already purchased from Israel, but blocked by the US following the 1982 Anglo-Argentine Falklands war. Israel is likely to test the Pampa this month.

With negotiations between Britain and Argentina over the Falklands still deadlocked, and the new US administration under President George Bush abiding by the sympathetic Reagan line, Argentina is unlikely to find much success either in selling its own Pampa or in getting hold of the fighters it feels itself to need following the severe losses it sustained between April and June, 1982.

Gary Mead

Executives of IAI are starting to speak of life after Lavi, reports **Hugh Carnegy**

Shekel's devaluation should lift exports

THE ISRAELI aerospace industry was born of the country's huge defence needs, and today it is the tightening of military budgets at home that is forcing the industry to rely more than ever on exports and to look for greater commercial civilian sales.

The dominating feature of life in the past few years for state-owned Israel Aircraft Industries, the country's biggest company, was the cancellation in 1987 of the Lavi jet fighter project.

IAI had already spent $1.6bn developing two air-tested prototypes of what was to be the Israeli air force's new generation of sophisticated combat aircraft, when the authorities, under pressure from the US whose products it would have competed with, decided it was too expensive for Israel's small economy to bear.

Although the Lavi was funded mainly by the Ministry of Defence, two years of heavy losses and write-offs followed for IAI as it re-organised its business after the loss of its strategic mainstay. In the same period, the workforce shrank from 22,500 to 16,000.

Now IAI executives are starting to speak with confidence of life after Lavi. A dramatic sign of the future came last September when IAI and the Israel Space Agency successfully launched their own satellite into space, making Israel the world's eighth space power.

This year, IAI sales are projected to reach $1.25bn, 75 per cent accounted for by exports, and the company anticipates a return to profits. As well as emerging from the shadow of the Lavi, the company's export performance should benefit this year from a 12 per cent devaluation in the shekel at the turn of the year.

Military hardware, sold everywhere from Africa to South America, continues to dominate IAI's range of some 400 products. But the company is aiming, within the next three to four years, to increase the proportion of civilian sales to 30 per cent of exports from the present 20 per cent.

Apart from the Lavi decision, the defence establishment in Israel has been under general budgetary constraint, so the emphasis on the military side at IAI is on refurbishment of existing equipment with home-produced high-technology products. IAI spends about 4 per cent of turnover annually on research and development.

This year it has delivered to the Israeli air force the first of a line of overhauled US F-4 Phantoms. Called the Phantom 2000, the planes have been stripped down almost to their frames and rebuilt with new avionics, new cabling and new weapons systems.

The company boasts that the result, priced around $8m, is an aircraft as good as new products such as the Tornado, for a third of the price. With some 3,000 Phantoms still in commission worldwide, it hopes to create a significant market in such business.

IAI is also producing a new unmanned airborne vehicle this year, marketed both for military reconnaissance and civilian use, and is striving to put to commercial use the expertise it developed in composites and other products for the ill-fated Lavi.

The company has traditionally benefited from well-established links to the US military industries, both directly to the Pentagon and to the US defence contractors. It has, for example, been involved in development work on anti-ballistic missile projects under the Pentagon's Strategic Defence Initiative (the Star Wars programme).

These will go on being important mainstays, but with budgetary constraints also taking a grip in Washington, and the resolution of a number of regional conflicts likely to slow demand elsewhere, there is an added onus on IAI to develop its other product lines if it is fully to realise its recovery from the Lavi cancellation.

Some of these have dual military-civilian functions. The unmanned aircraft are marketed by IAI as having many civilian applications, for example in forest-fire spotting.

The satellite programme, too, appears to have both military and civilian applications. IAI developed the Shavit rocket, which put the Israeli satellite in orbit last September, with Raphael, a government-owned weapons research and development company. IAI has also made a booking with Arienne Espace, of France, to launch Israel's first home-developed communications satellite in mid-1993.

On a more conventional level, IAI has stepped up its commitment to its business jet, the Astra. A competitor to the successful British Aerospace 125-800, the nine-seater, 5,000-mile-range Astra has made a sluggish start in its first two years on the market. But the company says sales, totalling 30 to date, are picking up.

It is banking on the erosion of trade barriers within Europe after 1992 to produce greater demand to ensure the jet's success.

If IAI can successfully pull free from the legacy of the Lavi, it may ultimately contribute to its own break-up. The Government is committed to slimming down the state sector and has already decided to dispose of a 26 per cent stake in Elta, IAI's electronics subsidiary. Other units of IAI may be picked for similar treatment if privatisation gets off the ground in Israel.

Chris Sherwell considers the ambitious private-enterprise proposal for an Australian spaceport

Consortia compete to build a launch site for the world

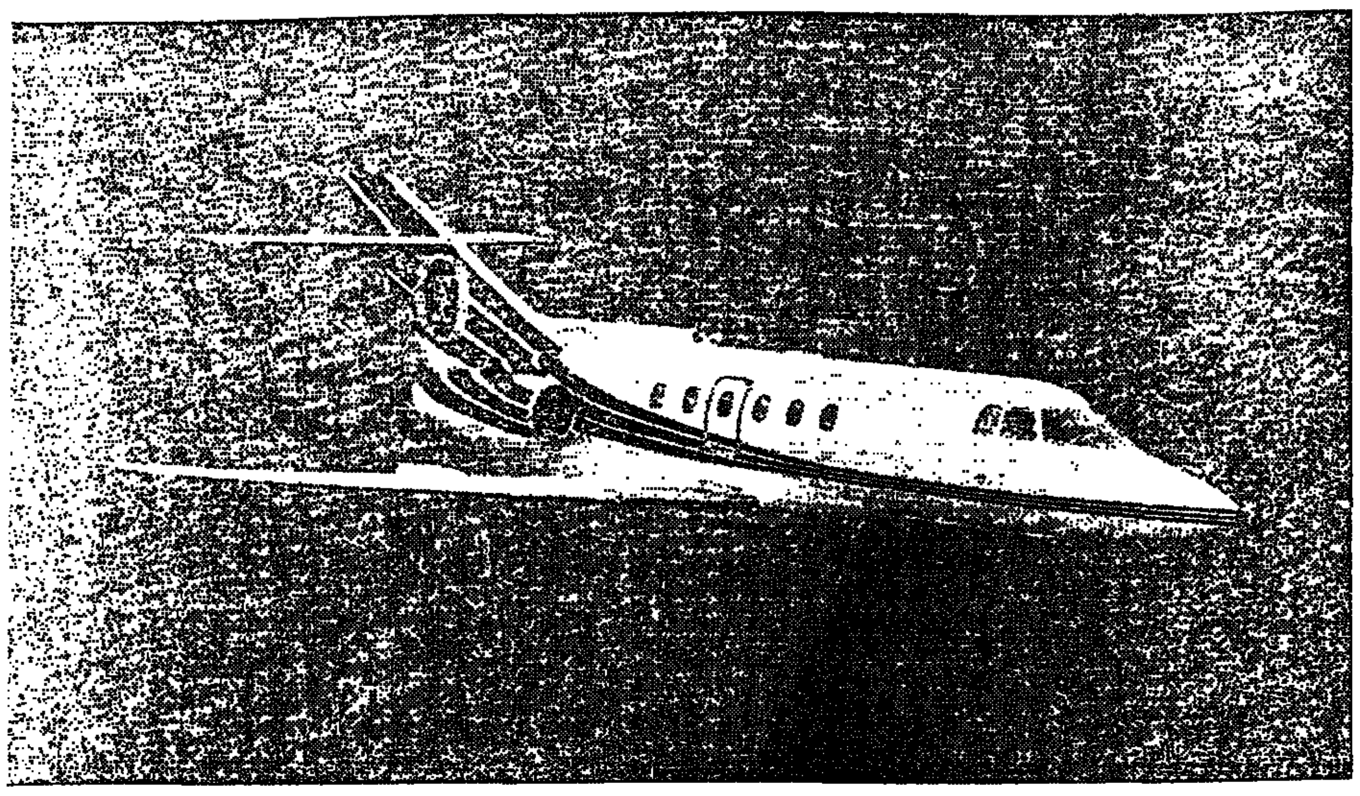
LIKE MOST sectors of the Australian economy, the aerospace industry is humming with debate over its future. Hot topics include the status of the international carrier Qantas, next year's end of the domestic two-airline policy, the problems of Sydney and other airports, and the state of the country's aerospace manufacturing industry.

For imagination and long-range thinking, however, nothing compares with the ambitious proposal for an Australian spaceport – a giant international commercial space-launching facility, to be located at remote Cape York, on Australia's "Top End."

Owned and operated by private enterprise, it would be the only one of its type in the world. The aim is to have it fully operational by 1995, and while there are some big hurdles to leap before the idea becomes reality, two different and competing consortia are currently working frantically to demonstrate its feasibility.

Their plans spring from the same assumptions – that the world needs a commercial spaceport and that Cape York is a near-perfect position for it – *but they differ over what* exactly is needed on site, the likely cost, and even the precise location.

One consortium, the Cape York Space Agency (CYSA), claims the backing of more than 30 well-known Australian and foreign companies and is currently led by the Essington group, headed by the entrepreneur Mr Malcolm Edwards. It includes Japanese interests in the form of Kumagai Gumi, the construction giant, and a group called Shimuzu.



The Elders XL group has painted its new BAe 125-800 in the colours of one of its most popular products – Fosters lager

The other is the Australian Spaceport Group (ASG), which brings together Broken Hill Proprietary (BHP), Australia's largest company, Comalco, the aluminium company which is part of CRA, the Perth-based Bond Corporation, Aussat, the Australian satellite communications company, and Martin Marietta, the US space launcher group.

The spaceport idea has its origins in the Challenger Shuttle disaster in 1986. That tragedy delayed a string of planned space launches, gave a boost to the European facility at Kourou in French Guiana, and revived a dying industry for expendable space launchers.

Overall projections for world demand are not well-defined, but the talk is of at least 20 and up to 36 craft being launched into space each year in the 1990s – not counting military and scientific payloads.

The Australian calculation is that Cape York could compete with facilities in such countries as China, Japan, perhaps the Soviet Union, Brazil and Indonesia if not with the Kourou centre.

One key advantage is its equatorial latitude, which allows it to use the world's gravity as a slingshot to put larger payloads into space. Others are its access both to equatorial and polar geostationary orbits, and the availability of vast tracts of sparsely populated land.

Viability obviously depends on capturing a significant share of the world market for launches of commercial, chiefly communications, satellites. Neither consortium is pinning its hopes on military or scientific launches, or counting on developments like the Hotol space plane and orbiting space stations.

One key advantage is the site's equatorial latitude

The ASG says its A$300m (£143m) proposal could be a going business if it attracted just six launches a year. The spaceport would be based near Comalco's bauxite operations on the peninsula's west coast, and would use a "universal launch pad" – an adjustable gantry which can assemble and launch different rocket types.

The more ambitious CYSA proposal, which is based on an east coast site so that launches would be over water, would cost A$1bn. But both groups need government backing for the project to succeed – not through direct financing, but to help smooth the way.

As one executive says of the CYSA proposal: "As a stand-alone commercial operation, it's probably marginal, perhaps even sub-economic. But other factors – opening up the area, technology transfer, a position in the world aerospace business – are in the national interest."

SOUTH AFRICA

Defence budget up by a fifth despite war's end

THE AEROSPACE industry in South Africa is virtually synonymous with the Atlas Aircraft Corporation, a subsidiary of the state-controlled arms corporation, Armscor.

It has become one of the world's most resourceful enterprises in the art of patching up and modernising obsolescent aircraft and devising derivatives of fixed-wing aircraft, helicopters and missiles.

The driving force behind its growth over the last decade has been the Government's determination to defeat the aims of 1977 UN arms embargo and allow the South African Air Force (SAAF) to compete effectively against the modern Soviet-supplied equipment used by the air forces of the front line states, especially Angola.

The end of the war in Angola, the phased withdrawal of all Cuban forces by mid-1990 and the Namibian independence process do not appear to presage any lowering of Pretoria's guard or its readiness to spend money on modernising *its fleet of ageing Mirage fight*ers and improving both its air-to-air and ground-to-air missile capacity.

The heavy costs involved in this priority task are reflected in the 22 per cent increase in this year's budgetary provision for the South African Defence Force.

The risks which Pretoria appears willing to run to obtain required technologies from abroad, clandestinely if need be, were underlined earlier this year when an Armscor agent, operating out of the Paris embassy under diplomatic immunity, was caught by French security in the act of negotiating the transfer of a mock-up British Blowpipe missile. Britain reacted by expelling three diplomats from the London embassy, principally because the putative suppliers of the missile were members of the Ulster Defence Association and London was outraged at Armscor's apparent willingness to provide arms, given its own pre-occupation with minimising foreign support for the banned African National Congress (ANC).

The Blowpipe incident followed the foiling of another attempt to acquire ground-to-air missile technology when the French government blocked an export contract for 50 Mistral air defence missiles ostensibly destined for the Congo. Paris suspected the missiles would have been sent on to South Africa, which in recent months has greatly improved its relations with Congo and other French-speaking states during the course of the Namibian and Angolan peace negotiations.

Fortunately for South Africa the embargo on sales of new military aircraft do not apply to the civil sphere, where South African Airways has committed R3bn (£688m) to enlarging and modernising its fleet over the next four years. In May Mr Eli Louw, the minister of transport, announced that SAA had bought two Boeing 747-400 jumbos for delivery in November 1990 and May 1991. The first two additions to its existing Airbus fleet of eight aircraft will be delivered in 1991. Four more will enter service between July and August 1992 and the last in September 1993. The new jumbos, whose 13,000 km range will enable the airline to make non-stop flights to Europe and the Far East, will raise the jumbo fleet to 16 aircraft.

Glyn Genin

South African Airways is to enlarge and modernise its fleet

Atlas, whose skill base has been enlarged in recent years by an influx of Israeli aerospace experts and technicians following cancellation of the Lavi advanced fighter programme, is possibly unique in the range of products manufactured under one roof. It makes and refurbishes fixed-wing aircraft and helicopters while building engines, other key components and spare parts and running extensive civil and military maintenance facilities. This concentration of effort ensures maximum cross-fertilisation and use of skills.

Supplying the needs of the SAAF is Atlas's top priority. The corporation also seeks export markets to spread overheads and attain longer production runs. It has identified a major market niche in the refurbishing of ageing Mirage aircraft for the air forces of developing countries, bringing them up to the standard of the South African Cheetah. This is based on the old Mirage 3 airframe, but equipped with the latest avionics and equipment, including Darter all-aspect missiles and helmet sights for the pilot.

Similar upgrading, albeit on a lesser scale, has helped to prolong the operational lives of the SAAF's ageing Buccaneer and Canberra bombers and reconnaissance aircraft. Atlas has also developed its own drone, the Seeker, which apart from reconnaissance has been used on remote-controlled bombing missions such as that which destroyed a key bridge during the fighting around Cuito Cuanavale 18 months ago.

Remarkable transformations have also taken place in the French-supplied Alouette helicopter, which was used as the basis for development of the Atlas Alpha XH-1 helicopter gunship, while the larger Puma helicopter is being used as an experimental test-bed for development of a heavier gunship.

Anthony Robinson

INDONESIA

Replacing the Fokkers

PT NUSANTARA (IPTN), Indonesia's much-criticised aerospace company, continues to lead a charmed life. Since it was set up in the mid-1970s, it has sold only around 200 aircraft, both fixed- and rotary-wing, mostly to the Government.

But the company enjoys generous state subsides – its budget was increased by 44 per cent for the current fiscal year. And, despite some grumbling within the cabinet, IPTN shows little sign of slowing down its ambitious research programme.

At its Bandung factory, the company's engineers are putting the first touches to the N250, a totally Indonesian-made 50-seat propfan plane, which IPTN hopes to unveil at the next Jakarta air show, in 1996.

The plane is being designed to replace Indonesia's large fleet of Fokker 28s, and is seen as a possible competitor to the Italian-made ATR 42 as a short-hop commuter aircraft within south-east Asia.

IPTN already has a number of collaborative ventures with foreign aircraft makers, from airframe manufacture to offset and simple maintenance agreements.

The company is working with *Aerospatiale, of France*, to make the Super Puma helicopter. A programme to construct the smaller Puma model was earlier abandoned.

Also in its rotary-wing sector, IPTN is building the BO105 twin-engined helicopter under license from Messerschmitt Bölkow Blohm (MBB), and the NB412 with Bell, of the US. However, sales have been disappointing, with demand from offshore rig operators depressed since the downturn in Indonesia's domestic oil activity.

IPTN has had more success as a sub-contractor to major international aircraft firms

As for the fixed-wing products, IPTN is jointly manufacturing the all-purpose Stol NC-212 Aviocar with Construcciones Aeronauticas (Casa), Spain's public-sector aircraft maker. The plane, which is described as the "jeep with wings", has been sold to the Indonesian armed forces.

Merpati, the state-owned domestic carrier, represents another captive market for the 212. As for foreign orders, five NC-212s were sold to Thailand, where the plane has been adapted by the agriculture ministry for cloud seeding.

A more ambitious project remains the CN-235 short-hop passenger aircraft, a joint design and manufacturing agreement, again with Casa. The two companies split revenues and costs on the project, with IPTN selling to Asia and Australia, while planes assembled at the Spanish plant are targeted for Africa and the US.

A joint marketing arm was set up last year, to probe the US aviation market. According to Dr Jusuf Habibie the IPTN chairman, Casa will deliver seven CN-235s to Conquest Airlines, of Houston – a sale worth $55m. But the version assembled at IPTN has still to receive an airworthiness certificate from the US.

IPTN has had more success as a sub-contractor, making components for the major international aircraft firms. In 1988, the company agreed supply deals worth a total of $125m, with General Dynamics and Boeing, of the US, as well as Fokker, the Dutch aircraft manufacturer.

Indonesia is viewed as a potentially huge market for both civilian and military aircraft sales. Dr Habibie, however, has made clear that a successful foreign bid must carry a considerable offset component.

A $337m deal with General Dynamics to buy F16 fighters included 35 per cent local offset work for IPTN. Prof Habibie is looking for similar terms from British Aerospace, which is trying to sell its Hawk 200 trainer to the Indonesian armed forces.

John Murray Brown

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COMPANIES & MARKETS
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INSIDE

Courageous jump by the Black Horse

When Lloyds Bank of the UK bought the bulk of Schröder Münchmeyer Hengst, the West German private bank then still overshadowed by a massive lending scandal which later took its managing partner to jail, it seemed to be what bankers might politely call a "courageous" step. Later, as the German capital markets were liberalised and foreign institutions scrambled in, opinion changed and within two years of the January 1984 acquisition, Lloyds was judged to have paid a bargain price for a healthy, if somewhat tarnished, name. Haig Simonian reports on Lloyds' plans for the German bank. **Page 32**

Swiss star rises

In another week of sharp fluctuations in world equity markets, Switzerland put in a rare star performance last week with a 4.8 per cent rise, fuelled by foreign buying and the evaporation of interest rate worries. The Asian region was volatile, with Singapore and Malaysia benefiting from the Hong Kong upset **Page 50**

Escape from the sticky patch

When Jan Ekberg (left) took over as president of KabiVitrum three years ago, the Swedish drugs group was going through a sticky patch. But, having made a loss in 1985, it last year achieved a profit of SKr636m ($96.36m) on sales of SKr3.2bn. Peter Marsh reports on the effects of Mr Ekberg's introduction of a more imaginative approach to marketing and his attempt to raise morale. **Page 29**

Argyll's plate-spinning act

Argyll Group, the Safeway, Presto and Lo-Cost food retailing chain, reported a 19 per cent rise to £208.5m ($327.3m) in pre-tax profits for the year to April 1, before exceptional costs of £29.8m (£43.5m) relating to the programme of converting Presto stores to the Safeway format. Mr Alistair Grant, chairman, said he was pleased but not smug about the figures. He said it was a plate-spinning act – maintaining profit growth while simultaneously pushing the conversion programme through. Maggie Urry reports. **Page 34**

Sun returns to earth

Like a rocket going out of control, Sun Microsystems has careered off its planned trajectory. Sales and earnings growth, which have been soaring, will take a sudden downturn in the current quarter, the US computer manufacturer revealed last week. Louise Kehoe looks at what has gone wrong for the company. **Page 28**

Market Statistics

Companies in this section

Chief price changes yesterday

FRANKFURT (DM)				PARIS (FFr)			
Rises				**Rises**			
Karstadt	533.5	+	6	Ausseedat-Rey	673	+	29.2
Nixdorf	310	+	8.8	Metaleurop	213	+	8.3
Falls				**Falls**			
Bayer Verein	381	–	3	Bail-Equip.	343	–	18
Commerzbank	237.5	–	3.5	Casino ADP	139	–	7.1
Contigummi	283.7	–	3.2	Locafrance	497	–	21
Viag	305.5	–	3.5	Roussel	955	–	43
NEW YORK ($)				**TOKYO (Yen)**			
Rises				**Rises**			
Nike	42⅜	+	2½	Japan Organo	1320	+	90
Novell	34⅛	+	⅝	Nikkan Chem.	1460	+	100
RJR Hldgs.Pl.	22⅜	+	½	Nippon Tst.Bk.	1780	+	130
Time Inc.	125⅛	+	3⅛	Tosoh	1010	+	108
Falls				**Falls**			
Am. Cyanamid	53⅛	–	2⅜	Nihon Tokushu	1560	–	120
Pyramid Tech.	9¾	–	3½	Toyo Linoleum	1060	–	80

LONDON (Pence)							
Rises				Reed Int.	404	+	12
Antofagasta	414	+	24	Rowlinson	250	+	30
Bridon	208	+	8	Scot. & New.	313	+	10
Brit. Aero	583	+	13	Sun Alliance	1091	+	23
Brit. & Comm.	775	+	7	Utd. Biscuits	337	+	6
Cable & Wire	465	+	15	**Falls**			
Dowty	277	+	11	Anglia Secure	212	–	21
Greycoat	490	+	18	Candover Inv.	248	–	15
Hawker Sidd.	705	+	22	Lambert Howarth			
Ladbroke	585	+	17		177	–	38
Laing Prop.	530	+	13	Racal Elect.	506	–	18
Land Sec.	567	+	18	Racal Telecom	479	–	11
Lucas Inds.	639	+	17	Wellcome	433	–	9
RMC	740	+	13				

CGE to limit shareholders' voting rights

By Patti Waldmeir

COMPAGNIE Générale d'Electricité (CGE), the French telecommunications and heavy engineering group, intends to limit voting rights of shareholders to a maximum of 8 per cent of the company's capital. This is believed to be the first time a French company has sought to impose such a limit.

Shareholdings above the 8 per cent limit would be disfranchised, although there would be no limit on the number of shares held. CGE said yesterday that the proposed limit would be put to shareholders for approval at the company's annual meeting on 20 June.

The company said the purpose of the move was to ensure a "balanced" shareholder base for itself, adding "we want to avoid the situation where we have one dominant shareholder". It acknowledged that the measure would effectively rule out a hostile takeover of the group, arguing that this would give CGE the same level of protection as many of its continental European rivals. The move presented no difficulties under French company law, it said.

None of CGE's current shareholders would be disfranchised by the move, as none currently holds more than 8 per cent of the group's shares. CGE therefore predicted that the measure would be approved by shareholders without hesitation, although analysts failed to see the incentive to shareholders.

The company said it believed other French companies would follow CGE's lead in putting takeover protection in place. However, although the shareholding structures of some French companies prevent takeovers without board approval, no other company is believed to have acted to disfranchise shareholdings in this way.

CGE stressed that it had no particular predator in mind in proposing the change.

However, analysts said CGE might be concerned to prevent possible moves by the Socialist Government to wrest control away from the "hard core" of friendly shareholders put in place by their right-wing predecessors.

They point to the battle earlier this year at Société Générale, the French bank, which ended with the appointment of two of the Government's allies to the bank's board and with state-owned groups raising their stake in the company to more than 20 per cent.

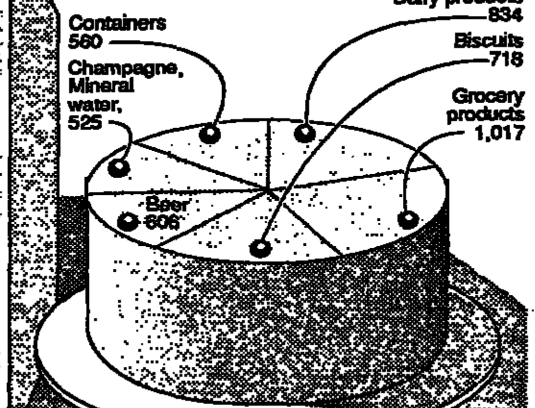
Lex, Page 26

The whole cake in one mouthful

George Graham and Lisa Wood on BSN's successful grab for all five of Nabisco's European businesses

Major European food companies	Nationality	Market capitalisation approx (£bn)
Unilever	UK/Netherlands	8.5
Nestlé	Swiss	6.5
BSN	France	2.6
Cadbury Schweppes	UK	2.2
ABF	UK	1.3
RHM	UK	1.3
United Biscuits	UK	1.2
Hillsdown	UK	1.2
Suchard	Swiss	1.1
Source Perrier	France	1.0
S&W Berisford	UK	0.8
Dalgety	UK	0.7
Unigate	UK	0.6
Northern Foods	UK	0.6
Tate & Lyle	UK	0.6
Booker	UK	0.6
St Louis	France	0.6
Beghin-Say	France	0.6
Bongrain	France	0.5
Hazlewood	UK	0.4
Salvesen (C)	UK	0.4
Wessanen	Netherlands	0.3
Hero	Swiss	0.3

Source: CL-Alexanders Laing & Cruickshank, Nov 1988



BSN, the French food and drink group, has taken a decisive step up the league of major European foods conglomerates with yesterday's deal to buy five Nabisco biscuit and snack businesses.

Mr Antoine Riboud, BSN's chairman, has already transformed his group once, shifting its focus completely from glass to foods.

Over the last few years, he has continued in this direction with a radical overhaul of BSN's brewing businesses and a stream of small and medium-sized acquisitions, such as last year's purchase from Hanson Trust of HP Foods, with its well-known British sauce brands.

Now, by paying $2.5bn for the Nabisco businesses, with a combined turnover of around FFr8bn ($1.2bn) and profits this year expected to total FFr620m, Mr Riboud is taking a bet which shows that at 70 years of age he is still prepared to look at the long term.

The deal also underlines the rapid rationalisation and consolidation of the European foods industry which is now in full swing in the run-up to 1992 and the creation of a single European market.

The industry is still relatively fragmented: a recent study carried out for the European Commission by the MAC group, pointed out that, of a sample of 46 leading EC-based food companies, half had a presence in only two or fewer countries.

But, having observed the successful internationalisation of other consumer industries, and the emergence of a small, mighty elite in sectors like toothpaste and liquor, food manufacturers are now trying to follow a similar path.

BSN, the third biggest player in the Community's food business after Nestlé and Unilever, should now be well positioned to exploit the slow break-down in national focus of European food businesses and exploit the brand strengths of the operations it has acquired.

The deal also gives it a big boost up the world food league table. According to Henderson Crosthwaite, the UK brokers, it rises from 15th to sixth position, neck and neck with Grand Metropolitan of the UK, which recently acquired Pillsbury, the US food giant, for $5.8bn.

Opportunity

But – as other companies have found – BSN has had to pay a substantial premium to get its hands on strong brand names.

It appears to be paying 26 to 27 times prospective earnings for the five divisions, even more than Nestlé of Switzerland paid to take over Rowntree, the British confectionery business.

"It is clearly expensive, but on the industrial level it is very positive. It is an important test for BSN, and it would have been a great pity to let the opportunity pass," comments Mr Francois Langlade-Demoyen, an analyst at Goldman Sachs in London.

"It is certainly expensive in the short term, but given the strategic positions and the market shares it acquires in France, and especially in the UK, BSN had to seize this chance," adds Mr Jean Weisse, an analyst at brokers Tuffier Ravier in Paris.

The five companies being bought – Saiwa in Italy, Belin in France, and Jacob's, Smith's and Walker's in the British biscuit, crisp and snack market – will double BSN's biscuit division, which earned FFr718m last year before tax and interest, on sales of FFr7.22bn.

The division was largely built up from the purchase of Generale Biscuit in 1986, and is based on brands like Lu, L'Alsacienne, De Beukelaer and Heudebert.

In France, the acquisition of Belin, number two behind BSN and especially known for its cocktail snacks, will give the group a market share of 40 to 45 per cent, but after contacts with the Government, BSN does not expect to have monopoly problems.

Seita, the French state tobacco company, was also interested in Belin, in partnership with the West German biscuit group Bahlsen, but decided to withdraw in the face of a likely bidding battle.

Seita denied yesterday that it had felt any pressure from the French Government to leave BSN alone in the lists.

In the UK, meanwhile, the three Nabisco companies place BSN number one in crisps and cocktail snacks, through Smith's and Walker's, and number two in biscuits, through Jacob's.

Penetrating the UK market has proved particularly difficult for BSN; Mr Riboud attributes it to the peculiar British nutritional habits and to the concentration of the domestic foods industry.

Strong increase

His £199m ($310m) purchase of HP Foods, with the Daddie's and Lea and Perrin's sauce brands, offered what he described last year as a "royal road" into the UK, but BSN has still been looking for other ways in: for example, in the mineral water sector, where the group is already strong in France and Italy with Evian, Badoit and San Gemini.

"The UK is the best biscuit market in Europe, and this was BSN's only way in, barring an alliance with United Biscuits, which would have been blocked on monopoly grounds," said one Paris analyst yesterday.

BSN's net profits rose 41 per cent last year to FFr2.189bn, thanks largely to a strong increase in earnings at the main dairy products division, where its world-leading Gervais and Danone yoghurt brands recovered after a decline in 1987.

This year, however, analysts had expected a much more modest increase in profits, and the likely increase in financial costs in the wake of the Nabisco purchase will slow earnings growth still further this year and next.

Although BSN raised money last year through a FFr1.704bn issue of bonds with warrants and through the sale of its Bottu aspirin division to Rhône-Poulenc, it also embarked on a string of acquisitions in the UK, Italy, Spain and the US.

The group now has spare cash of FFr1bn to FFr1.5bn and a multiple option facility of FFr4.5bn, but this will still leave around FFr10bn to borrow in order to finance the acquisition of the five Nabisco subsidiaries.

The group has long-term borrowing of only around FFr5bn, against equity of FFr16bn. This leaves ample borrowing capacity but will require refinancing over the medium term.

"When we buy a company, or five, we pay and then we refinance later," commented a BSN official yesterday.

"It is clear financing costs will be enormous, perhaps FFr1bn over a full year. That may reduce earnings growth to 10 per cent this year and perhaps nothing in 1990, depending on the financing conditions," comments Mr Langlade-Demoyen of Goldman Sachs.

"But it makes BSN one of the three players on the European scale."

BNZ to rebuild capital base

By Gordon Cramb in London

BANK OF New Zealand (BNZ), the country's largest commercial bank, yesterday launched a NZ$600m ($344.8m) effort to rebuild its capital base after unveiling provisions on loan losses amounting to 9.5 per cent of its total lending portfolio.

As part of the restructuring, a key 29.5 per cent stake in the state-controlled BNZ will pass to Mr Michael Fay and Mr David Richwhite, the two local merchant bankers who backed New Zealand's ultimately successful America's Cup yachting challenge. Through a quoted investment vehicle called Capital Markets, they will pay NZ$300m for the BNZ holding – under an arrangement with the Government struck at a discount to the market price.

The upheaval is the latest in a series to beset BNZ, which the Government had been seeking to sell following the flotation of an initial 13 per cent in 1987. In March it rejected as too low a bid for the remainder from National Australia Bank, having earlier spurned an offer by Brierley Investments (BIL), headed by Sir Ron Brierley. Until February, Sir Ron was also BNZ chairman, but quit amid discord over his role.

BNZ has been labouring under a depressed New Zealand economy and tougher competition following banking deregulation. However, the NZ$1.29bn write-off made yesterday was unexpectedly large and related in part to previously undisclosed setbacks in Australian corporate lending on top of a known NZ$200m exposure to Equiticorp, the New Zealand investment company which collapsed in January.

Mr David Lange, the Prime Minister, said the bank "took a bath in Australia and I don't think Wellington knew." Mr Frank Pearson, the new BNZ chairman, described the losses there as "more of a shower".

Overall, the attributable loss for the year to March was NZ$648.8m, compared with profits last time of NZ$199m, and the final dividend is being omitted. BNZ shares fell 22 cents

To set in train its recovery and meet world capital adequacy standards, BNZ is to raise NZ$405.4m through a seven-for-10 rights issue priced at 70 cents. The Government, while underwriting the issue, will waive the bulk of its own entitlement in favour of Capital Markets. The state shareholding could thus fall as low as 52 per cent.

Capital Markets shares firmed 3 cents to NZ$1.17.

Lex, Page 26

De La Rue profits fall to £26m

By David Waller in London

DE LA RUE, the bank-note printer and electronic equipment manufacturer, yesterday reported a collapse in profits for 1988-89. At the pre-tax level, profits dropped from £62.42m ($97m) to £26.3m, while earnings dwindled from 31.1p to 4.9p per share.

At the same time, the company announced the resignation of its chief executive, Mr Brian Malpass, on the grounds of ill health. Mr Malpass took extended leave in March on doctor's orders and is now suffering from physical and mental exhaustion.

In February, the company warned that problems at two subsidiaries – Crosfield Electronics and Printrak – would lead to a sharp fall in profits. In the event, the downturn was significantly worse than expected – brokers had been expecting some £34 to £35m in profits for the year to the end of March.

Nevertheless, De La Rue's shares rose yesterday, from 310p to 315p, capitalising the company at £435m.

Mr Robert Maxwell, the British publisher, holds a 15 per cent stake accumulated in the aftermath of the October 1987 crash and Mr Carlo de Benedetti, the Italian industrialist, last week took his holding through the 5 per cent level.

There was much speculation that their stakes could be used as a platform for a hostile bid.

Crosfield, a manufacturer of sophisticated electronics equipment used by the newspaper industry, saw its profits fall to £5.2m, a quarter of the level in the previous year.

De La Rue said it had geared up its production in anticipation of sales which failed to materialise, incurring irrecoverable costs as a result.

The company acknowledged that Crosfield was prone to volatility. Its products were "big-ticket" items, demand for which proved highly sensitive to interest rate rises. Having started a rationalisation programme, De La Rue is in talks with a number of parties – none identified – with a view to finding a strategic partner for the business.

Printrak, a manufacturer of automated finger-print identification systems, lost £14.7m due to an absence of orders, and costs incurred in support of systems recently sold. Since the year end, orders had picked up, but it has proved impossible to find a buyer – or a partner – for the business as indicated in February.

The company said it was confident that the problems could be overcome, and remained convinced of the underlying strength of the business. As an expression of this, the dividend was maintained at 13.25p for the year.

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Gateway 'continuing to improve'

By Nikki Tait in London

GATEWAY, Britain's third largest food retail group and currently fighting a hostile, leveraged £1.87bn ($2.93bn) offer from the newly-formed Isosceles company, yesterday maintained that its trading improvement in the 12 months to the end of April had continued into the current financial year.

It said that group trading profits for the first four-week period showed a 34 per cent advance on the comparable figure a year ago. Gateway has already estimated pre-tax profits of £213.7m in the year to end-April, compared with £185.8m in the previous year.

"The foundation of this further improvement in profitability is the strong performance of Gateway Foodmarkets, where the trading margin has risen by over a quarter to more than five per cent," it added. Gateway Foodmarkets is the core food retail business in the UK.

However, the new document – the last in which Gateway can release new financial information – brought swift criticism from Isosceles.

The bidder argued that four weeks was a very short trading period, which needed to be judged alongside pricing and provisioning policies, and had coincided with particularly fine weather this year when food retailers generally could be expected to have done well.

Isosceles also noted that the Gateway Foodmarkets margin was over 6 per cent in the second half of 1988-89 – although it acknowledges that there is some seasonality in the business.

Gateway said that "in recognition of the group's estimated record profits and as an indication of our continuing confidence", it intends to pay a final dividend of 6p, making a total of 9.5p for the year, as against 8.5p.

It says that it intends to maintain its policy of paying dividends equivalent to one half of attributable earnings.

The food retail group has also commissioned a "desk appraisal" of its UK and Irish properties from chartered surveyors Jones Lang Wootton. It says that these show a value of £1.078bn. This figure does not include the stores and warehouse complex which are part of Herman's, Gateway's US sporting goods retail subsidiary.

However, both the dividend payment and the property valuation brought a further attack from Isosceles. It pointed out that Gateway's level of cover is well below that of its rivals, and that no food retail business was valued on its underlying assets.

It added that Gateway has still not answered its own queries over the previous profit estimate.

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NWA gives bidders 10 days to revise offers

By Roderick Oram in New York

THE BOARD of NWA, parent of Northwest Airlines, has given bidders until June 16 to revise their offers to buy the company in an auction which is likely to top $3bn.

All the initial proposals received last week were unacceptable in their present forms, a committee of independent directors assessing the offers said. The offers were highly conditional and posed considerable risks to NWA's shareholders that they could not be consummated.

In revising their offers, investors should address concerns over financing and questions about high debt levels raised by the US Department of Transportation, it said.

NWA has refused to disclose the bidders' identities or the terms they offered. It is known, however, that at least four offers are on the table: from Pan Am for about $110 a share; from Mr Marvin Davis, the Los Angeles investor, for more than $90 a share; from NWA's machinists union for a recapitalisation which would pay shareholders about $110 in cash and stock dividends; and from a group of investors led by Mr Al Checchi, a former chief financial officer at Marriott Hotels.

Sun Micro dives out of planned trajectory

Louise Kehoe on the sudden downturn forecast by a fast-growing computer maker

Like a rocket going out of control, Sun Microsystems has careered off its planned trajectory.

Sales and earnings growth, which have been soaring, will take a sudden downturn in the current quarter, the computer manufacturer revealed last week.

Sun will not reach the $2bn in fiscal 1989 sales that has long boasted, and it may record its first losses since going public in 1986.

The fastest growing computer manufacturer in history, Sun has gained worldwide market leadership with its high performance desk-top computer workstations.

These have challenged the traditional role of minicomputers in office automation and created a new segment of the market for powerful desktop machines used by engineers, scientists and financial analysts.

Beyond that, Sun has become the latest Silicon Valley legend. Like Apple Computer, it was founded by a group of young men with little prior business experience. Mr Scott McNealy, co-founder and chief executive is now only 34 years old.

While Apple cultivated its image as a free-wheeling, egalitarian corporation, Sun has created a brash, hard-driving company, characterised by its executives frequently disparaging comments about competitors.

Until now, it has appeared to be a formula for success. The company has clocked up an annual compound growth rate of over 161 per cent over the past five years to reach projected sales in fiscal 1989 of $1.8bn.

After seven years of soaring growth, however, Sun has faltered.

It was a day that Sun executives had feared and its competitors had yearned for. But in the event, no outsider could take credit for the company's reverse.

It seems to have become the victim of its own success. The company's young executives have momentarily lost control of a business whose growth had overcome their ability to accurately forecast demand or component requirements.

On April 12, Sun boldly unveiled five new products to replace and expand its entire product line. While they attracted worldwide attention, the company was ill-prepared to deal with the product transition.

Struggling to keep up with a fast changing mix of incoming orders and with sales growth *running at over 100 per cent a* year, Sun simultaneously attempted to overhaul its own internal computer-based management information system.

In early April, it turned off the minicomputers upon which it had relied since it was founded in 1982 and turned on a new mainframe computer system.

It was a decision that had been put off repeatedly as Sun ploughed its resources into research and product development. Ultimately, however, its computer consultants warned that drastic changes were essential. "We were told that it could be fatal if we put off surgery any longer," a Sun executive said.

'It is very, very difficult, growing at the rate we are, to forecast accurately. We did the best we could with the data that we had'

The timing could not have been worse. The new computer system failed to operate properly and for two weeks the company was unable to process new orders. Even now, managers are not receiving timely reports on sales, orders, component inventory and other vital data.

Mr McNealy admits: "In retrospect, we should have upgraded the MIS earlier. The system I put in place when we were a five person company just wasn't up to it. I thought it would have lasted us for decades . . . who could have known that we would be selling at a $2bn per year run rate by now?

"It is very, very difficult, growing at the rate we are, to forecast accurately. We did the best we could with the data that we had."

Sun also failed to predict the continuing strong demand for its old products. "We told the salesforce that the new products would be in limited supply – apparently they took that to heart," says Mr McNealy. "Perhaps we misdirected them."

The result has been that Sun is short of components required for its products.

All this might have been avoided if Sun had not been racing for record growth. Growth, however, has always been a fundamental element of Sun's philosophy.

Will Sun slow down? "That has become a huge issue in executive strategy sessions," a company executive acknowledges. "Next year, growth has got to slow down. It would kill us. *In fiscal 1990 you will not* see 100 per cent growth."

Nevertheless Sun's fundamental strategies remain intact. The company's executives maintain that only by growing as big as possible as quickly as possible can Sun achieve its goal of becoming the next giant in the computer market – a company that can challenge IBM, Digital Equipment, Apple Computer and all comers.

Sun also remains a champion of "open systems," the trend toward software standards that enable different types and brands of computers to share programs and data.

In an effort to establish its computers as a new industry standard, mirroring the impact of IBM's personal computers, Sun has been encouraging competitors to "clone" its computer architecture by licensing several chip makers to produce its high performance Sparc reduced instruction set computer (Risc) microprocessor chips.

In its latest move, Sun licensed Toshiba of Japan to use its hardware and software technology to build Sparc personal computers.

But Sun is facing intensifying competition from the computer industry establishment.

Hewlett-Packard has recently strengthened its stake in the computer workstation market through the acquisition of Apollo Computer. And IBM *is placing increased emphasis* on the workstation market.

In the wake of last week's announcement, Sun must also regain credibility.

The company's surprising earnings projection was pre-empted by heavy stock selling that drove the company's stock price down by close to $2.

CNW agrees $1.6bn buy-out offer from management

By Deborah Hargreaves in Chicago

CNW, THE Chicago railroad group agreed a management buy-out offer yesterday worth some $1.6bn.

It will be acquired by a group led by senior management and including Blackstone, a New York investment bank, Donaldson, Lufkin and Jenrette Securities and Union Pacific, the railroad group, after conducting an auction over the weekend. It said a cash tender offer of $50 per share for 91 per cent of its shares – or a total value of $800m – would begin within five days.

The bid will be financed partly by bank financing secured by Blackstone and a $475m bridging loan from DLJ. The deal will almost double the company's debt load, which it had been planning to reduce.

However, CNW has said it would not be selling any significant assets to pay for the transaction. Mr Robert Schmiege, CNW chairman, said the company's business plan focused on upgrading its main line and not on selling assets.

The financial structure of the company envisages new equity totalling $300m, including $100m provided by Union Pacific to make capital improvements. Union Pacific is eventually to hold a 25 per cent stake in the merged company – the railroad will hold 100m pay-in-kind preferred shares which will be convertible in five years.

CNW said it agreed with Union Pacific to spend $115m on upgrading its main east-west line over the next three years. The agreement includes investing $40m in that line later this year. Union Pacific uses CNW's line for transporting freight into Chicago and its involvement in the bid is a way of securing that route and ensuring it is adequately maintained.

CNW held the weekend auction after rejecting a hostile bid of $44 per share from Japonica Partners, an investment group. It also rejected a partial buyout from its union.

Eastern Air creditors face difficult talks

By Roderick Oram

CREDITORS face difficult and long negotiations with Eastern Air Lines over its recovery plan following the breakdown of efforts to find a buyer for the strike-stricken carrier.

High demands by Eastern and its parent, Texas Air, were blamed by some of the creditors for the inability of Mr Joseph Ritchie, a Chicago options trader and the last potential bidder, to strike a deal.

The failure was a serious blow to Eastern's unions which had withdrawn their labour in early March to try to force Mr Frank Lorenzo, Texas Air's chief executive, to sell off the carrier. Highly unpopular with his employees, Mr Lorenzo is demanding steep wage cuts.

The machinists and pilots unions were prepared, however, to back Mr Ritchie with pay concessions of up to 35 per cent to help him revive Eastern.

Union officials said Texas Air was demanding $500m cash for Eastern, transfer of some of its assets to Texas Air and forgiveness of some parent company debt owed to Eastern. The total demands were worth some $750m, compared with only $464m proposed by Mr Pete Ueberroth, the investor, in an abortive offer for the airline in April.

Rather than selling Eastern, Mr Lorenzo is pushing to sell off some of the airline's assets, pay down debt and rebuild service with a new schedule about two-thirds the size of the old.

Frank Lorenzo: pushing to sell airline's assets

Under the protection of the new York bankruptcy court, Texas Air resumed negotiations yesterday with its creditors over its reorganisation plan. But there seems to be little agreement so far between groups of creditors over the final shape of a deal with Eastern.

Since the strike began Eastern has operated only about 10 per cent of its flights. It said last week it hopes to have about 30 per cent of its new schedule operating by July and 100 per cent by December.

It plans to start rebuilding services on Friday by reviving its largely dormant Atlanta hub. From only four flights a day in recent months, it hopes to expand to 82 by July 2 using newly hired pilots and the few employees who have crossed picket lines. It has also slashed prices to attract passengers.

Paramount posts strong quarter

By Karen Zagor in New York

PARAMOUNT Communications, the renamed Gulf + Western entertainment and publishing group, reported strong second-quarter earnings thanks to the performance of its discontinued financial services business.

The company, which recently said it would sell its extremely profitable Associates financial services group, reported net income for the quarter ended April 30 of $65.6m or 55 cents a share, against $55.5m or 46 cents.

However, without the income from the Associates, Paramount reported a loss of $5.3m or 5 cents a share for the quarter. Revenues exclusive of financial services were $699.1m, against $619.6m a year earlier. The year-ago earnings included an extraordinary net gain of $4.8m.

For the six months, net income was up 12 per cent to $134.8m or $1.13, against $120.2m or $1.00 the previous year. Mr Martin Davis, chairman and chief executive, said record earnings from Paramount's entertainment business were offset by losses in Simon & Shuster's educational publishing and lower earnings from consumer publishing operations.

The New York-based company said traditional second quarter losses in educational publishing were compounded by the expense of launching several new textbook series. However, for the full year, Paramount expects double digit growth from its educational operations.

Earnings were strong across the board from Paramount's entertainment operations which include television, film exhibition, New York's Madison Square Gardens and the Paramount film studio.

Petro-Canada and Neste plan octane booster plant

By Robert Gibbens in Montreal

PETRO-CANADA and Neste Oy, the Finnish energy group, will build a C$300m (US$249m) methyl tertiary butyl ether (MTBE) plant in Edmonton, Alberta. The product is used as an octane booster in unleaded petrol.

The plant is due to start production in 1991 with annual capacity of 453,000 tonnes. Canada is phasing out leaded gasoline by the end of 1990.

Neste Ov will own 75 per cent of the plant and Petro-Canada 25 per cent. Production will be marketed in Western Canada and the US, while another plant, with different ownership, will be built in eastern Canada, possibly in Montreal.

Bitter pill puts KabiVitrum on the mend

Peter Marsh talks to a tough boss who turned round an ailing Swedish drugs company

Jan Ekberg has a tough look about him which may stem from the decade he spent in Sweden's building products industry. Just over three years ago, he took on a new challenge – as president of KabiVitrum, a Swedish drugs group which had some promising products but which had been going through a sticky patch.

Mr Ekberg, 52, had to work hard to knock KabiVitrum into shape. The company is owned by Procordia, Sweden's state-controlled industrial holding group, and made a loss in 1985, just before he took over.

Mr Ekberg introduced more imaginative marketing and tried to raise morale at Kabi, which had been in the doldrums since a health scare that reduced sales of one of its important products.

Another unsettling factor had been the rumours during 1985 of the company being acquired by Fermenta, a fast-growing Swedish pharmaceuticals group headed by Mr Refaat El-Sayed, an Egyptian-born businessman. That idea fizzled out when Mr El-Sayed was found to be involved in several scandals and was eventually charged with fraud.

Now Kabi – which is Sweden's third largest drugs group, after Astra and Pharmacia, and is best known for its nutrient supplements and expertise in biotechnology – appears to have recovered.

Last year it made two important acquisitions, which helped it boost sales to SKr3.2bn ($485m) from SKr1.81bn in 1987 and turn in a pre-tax profit of SKr636m, up from SKr240m.

The turnround was achieved after Kabi's new boss cut costs by reducing the 2,000-strong workforce by some 10 per cent. He also introduced more efficient marketing, splitting the company into 10 product divisions in which sales staff work side-by-side with research workers rather than in individual departments.

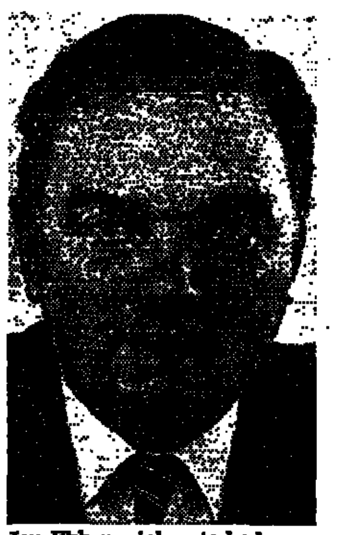
Mr Ekberg says that this approach, coupled with a number of new senior managers, had a "fantastic" effect on Kabi. "There is now much better liaison between the different parts of the company."

He reckons that, coming to Kabi from outside the drugs sector, he could look afresh at its problems. But it was not all plain sailing. "A lot of people asked me what I knew about the pharmaceutical business."

The Kabi president – whose populist side to his character is shown in a photograph of him playing football with some of his workforce – knows he has more to do. In drug-industry terms Kabi is a minnow – its sales just about put it into the top 75 medicines companies worldwide.

He wants to double Kabi's turnover over the next five years and increase its presence in the non-Nordic parts of Europe, where it is weak. "We have to be thought of as not a Swedish company but as a European one."

About three quarters of Kabi's sales come from western



Jan Ekberg: job cuts had "fantastic" effect on Kabi

Europe, but European sales outside Scandinavia account for only half this figure. Mr Ekberg would like to push this proportion up to two thirds by the early 1990s.

With this aim in mind, Mr Ekberg is considering acquisitions in France, Spain and Italy which fit with Kabi's main product areas.

The expansion started last year when Kabi bought a controlling stake in Pfrimmer, a West German drugs company. It also purchased Swedish medicines group Läkemedel.

State-run Procordia sold two fifths of its equity to the public just over a year ago. Being part of this group should not hamper Kabi in its search for growth, says Mr Ekberg, who adds that the holding company has plenty of cash for possible acquisitions. Part of this cash is the SKr1bn that it raised via its stock flotation.

Although Kabi's sales put it behind the top drug companies, Kabi stands out because of its focused approach to products. By concentrating on narrow fields, Kabi has been able to build sales in areas of limited competition from the giants.

An example is the company's activities in hospital-nutrition products, used in intravenous feeding. Kabi is among the world leaders in this area, which brings in about a third of sales.

Kabi is also strong in products which are use biotechnology to make drugs based on natural substances. These products account for 40 per cent of sales.

Included in this group is a genetically-engineered form of human-growth hormone, a substance secreted in the body. It is made only in small quantities by people suffering from restricted growth. They need additional sources of this hormone to develop normally.

An earlier version of this hormone, produced by Kabi from corpses, was the subject of a health scare in the mid-1980s. This was related to possible contamination of products and led to a drop in sales.

The Swedish company is now believed to take roughly half the world market in genetically-engineered human growth hormone, worth £160m ($255m) a year. Competitors include Eli Lilly of the US, Denmark's Novo-Nordisk and Sanofi of France.

Other biotechnology-derived substances sold by Kabi include streptokinase, a drug for removing blood clots which can kill people if they form in the aftermath of heart attacks, and blood-plasma products used in transfusions.

With streptokinase, which is also sold by Hoechst of West Germany, Kabi is gaining from doctors' increased interest in treating heart-attack patients with clot-dissolvers.

The final 30 per cent or so of Kabi's revenues come from products such as drugs for urology and a not particularly impressive group of non-prescription medicines sold mainly in the Nordic countries.

Mr Ekberg says he plans to build on Kabi's strengths by continuing this emphasis on small, tightly defined areas of the healthcare business. He expects the company's high level of research and development spending, which accounts for some 15 per cent of sales, to bring other products related to its current activities.

For instance, the company has high hopes for a group of esoteric, biotechnology-derived hormone products now under development which could help in a variety of conditions from diabetes to skin disorders.

Republica plans L10bn increase in capital

LA REPUBBLICA, the top-selling Italian newspaper published by the Mondadori group, will propose a L10bn ($7.1m) capital increase at the end of the month as part of a plan to request a listing on the Milan bourse, AP-DJ reports.

La Repubblica confirmed local press reports of the capital increase, but details were not immediately available from the paper or its publisher. Mondadori is headed by financier Carlo De Benedetti.

Reports say that the increase, which would bring La Repubblica's nominal capital to L11bn, would be effected through a rights issue to shareholders. The new share issue would be followed by another capital increase next year and by a share split.

It is understood that the proposals will be presented to shareholders at the company's annual meeting on June 28.

Mr De Benedetti recently acquired control of the outstanding 50 per cent of La Repubblica when Mondadori acquired the L'Espresso publishing group.

This deal caused speculation that the operation would result in a share listing for the Rome-based daily newspaper.

Strong recovery at DnC signals end to lean times

By Our Financial Staff

DEN NORSKE Creditbank, once Norway's biggest bank but forced to shrink in size in recent years as a result of massive loan losses, yesterday announced four-month results showing a strong recovery.

Operating profits before tax and losses for the four months more than doubled from NKr278m ($39m) to NKr573m while a substantial turnround at the net level produced a profit of NKr460m, against a loss of NKr338m for the first four months of 1988.

DnC, which implemented sweeping management and organisational changes last year, said the recovery stemmed from improved net interest income, increased operating income and a significant reduction in operating expenses.

Helped by staff cuts, operating expenses for the four months fell to NKr984m from NKr1.035bn. DnC said the effects of its streamlining programme had only been partly reflected in the bank's accounts for the four months.

It added that losses on loans and guarantees were on a falling trend and estimated that for the full year these would total NKr1.3bn.

In 1988 loan losses amounted to NKr1.8bn.

Apart from cleaning up its loan book, DnC has been pushing through wide-ranging staffing changes. The number of employees totalled 3,300 at the end of April, with DnC claiming a reduction of "1,058 man-years" since April 1988.

Results of the bank's international operations have shown a clear upturn. DnC London, the largest unit within the international division, increased four-month operating profits from £4.1m ($6.5m) to £7.7m.

Lively chemicals demand boosts Hoechst earnings

By Haig Simonian in Frankfurt

GROUP SALES at Hoechst, the leading West German chemicals company, rose by 13 per cent in the first five months of this year thanks to continuing strong demand for chemicals products, lively foreign demand and satisfactory domestic sales.

Mr Werner Hilger, the chief executive, said yesterday at the group's annual meeting that business had developed "very pleasingly" this year. He voiced optimism for the year as a whole, but gave no forecast for profits or sales.

Last year, group pre-tax profits rose to DM4.1bn ($2.09bn) on sales of DM4.1bn, leading Hoechst to raise its dividend to DM12 a share. Profits in the first quarter of this year climbed 23 per cent to DM1bn.

Mr Hilger said sales so far this year had been bolstered by the strength of the dollar, alongside strong demand factors.

Hoechst remains committed to the large-scale use of genetic methods for chemicals production, despite strong opposition in Germany. Mr Hilger warned against banning genetic production and said that Hoechst intended to press ahead with its pilot insulin plant, for which it has been given a two-year operating licence, from the beginning of next year.

With all Germany's big three chemicals groups facing capacity constraints, Hoechst had decided to boost its investment plans this year. Total fixed investment is due to exceed DM3bn for the first time, against DM2.87bn in 1988.

Around DM1bn of the total will be spent on the construction of new plant, following more careful capacity expansion in previous years, he said.

● BASF is to merge two UK subsidiaries. BASF Chemicals, a production unit, is to join forces with BASF UK, which is responsible for sales and trading.

Investment income lifts Swiss insurance company

By John Wicks in Zurich

WINTERTHUR, the Swiss insurance concern, reports a 15.2 per cent increase in group net profits to SFr220.5m ($130.5m), following a 27.3 per cent increase in gross premiums to SFr10.36bn.

The company attributed the improvement to growth in investment income, up 21.4 per cent to SFr1.8bn. This more than compensated for a 43 per cent jump in non-life underwriting losses to SFr437.8m. Winterthur attributed this to rising underwriting losses in France and a general deterioration in car insurance companies' results in Europe. The overall rise in non-life underwriting losses was 7.2-7.8 per cent of premiums earned for own account.

About half the growth in revenues came from acquisitions, with the Italian group Intercontinentale accounting for SFr586m last year, Neuchatel General in Switzerland SFr447m and Southern Guaranty of the US some SFr81m.

Premiums from existing operations improved 13.6 per cent.

Outsiders able to invest in new electronics unit

THE CAPITAL of a new flight electronics unit set up by France's two leading state-controlled electronics and aviation groups will be open to outside investors, Reuters reports from Paris.

The new venture, announced in February between Aerospatiale and Thomson-CSF, will be about 52-per-cent-controlled by the two groups via a jointly-owned holding company. Aerospatiale will hold a further 10 per cent on its own and the remaining 38 per cent will be traded on the Paris bourse.

AMB confirms 16% rise in net profits last year

By Our Financial Staff

AACHENER UND Muenchener Beteiligungs (AMB), the big German insurance group 20 per cent owned by Royal Insurance of the UK, has confirmed that net profits for 1988 increased by 16 per cent to DM64.6m ($33m).

The company expects profits for 1989 to exceed those of 1988 and says its efforts to expand into other areas of financial planning will continue to play a prominent role.

Operating profit rose 3.8 per cent to DM112.8m last year.

AMB plans to maintain its dividend at DM12.50 a share.

The company, which through several strategic acquisitions in recent years has become one of Europe's largest insurance companies, says it plans to ask shareholders for permission to increase its nominal capital by DM110m for unspecified future purposes.

Chairman Mr Helmut Gies says he has no concrete plans for the money, but says AMB wants to be able to act quickly in the burgeoning European market.

Swedish bank ahead 4% but lending slows

By Robert Taylor in Stockholm

SVENSKA Handelsbanken, Sweden's second largest commercial bank, reported an increase of 4 per cent in operating profits yesterday for the first four months of the year to SKr1.263bn ($191m), compared with SKr1.209bn for the same period of 1988.

Income rose 6 per cent to SKr2.551bn from SKr2.410bn.

The bank said that lending to the consumer sector was increasing more slowly than in early 1988, mainly because of a proposed tax reform. This will abolish tax relief on interest paid for loans.

The bank also reported strong demand for long-term housing and property credit.

INTERNATIONAL COMPANIES AND FINANCE

NTT strives to rehoist its standard

Japan's largest company is stuck in a mire reports Stefan Wagstyl

When Mr Haruo Yamaguchi took over a year ago as president of Nippon Telegraph & Telephone, Japan's largest company, he seemed to have everything going for him.

The hand-picked successor of Mr Hisashi Shinto, one of Japan's greatest post-war industrialists, Mr Yamaguchi inherited a company brimming with confidence. NTT was riding high on the stock market. It was the most popular company among graduate job-seekers. It had the ear of bureaucrats and government ministers. It was seen as a standard-bearer of Japan's advance in high-technology.

Mr Yamaguchi could hardly have imagined that a year later he would be touring NTT's offices throughout Japan trying to restore his employees' broken morale.

The immediate reason for the company's fall from favour has been the involvement in the Recruit affair of Mr Shinto and two other former NTT executives. The three are awaiting trial on charges of bribe-taking.

But the malaise goes deeper than this. At bottom, NTT is the victim of the unrealistic expectations which were fostered both inside and outside the company.

NTT shares, which were originally sold at Y1.6m ($11,200) apiece, doubled in days to Y3.2m. A year ago they were still above Y2.4m. Now they are at Y1.5m. People were carried away by the glamour created by the group's privatisation masterminded by Mr Shinto. Instead, of building on his mentor's successes, 64-year-old Mr Yamaguchi has to pick up the pieces.

In an interview with foreign journalists Mr Yamaguchi identified dealing with the aftermath of the Recruit affair as his first priority. He says that the group will not be making any organisational changes following the affair since the scandal involved a few individuals, not the company as a whole.

He adds that the direct effect on the company's sales has been negligible. People have not stopped using the telephone. Several public bodies have temporarily crossed NTT off their list of suppliers for building contracts. But Mr Yamaguchi says the losses amount to just a few billion yen.

Nevertheless, Mr Yamaguchi recognises there is a great deal to be done before NTT recovers from the Recruit affair. "We would very much like to regain the trust of our customers," he says. The group has launched a campaign called Best Service, designed to remotivate staff, some of whom have suffered abuse and insults from customers over the company's involvement in Recruit.

The campaign is more than just a slogan. Industry analysts are concerned that, in the wake of Recruit, NTT might revert to the bureaucratic attitudes which prevailed before privatisation, when the company was often criticised for being insufficiently responsive to customers.

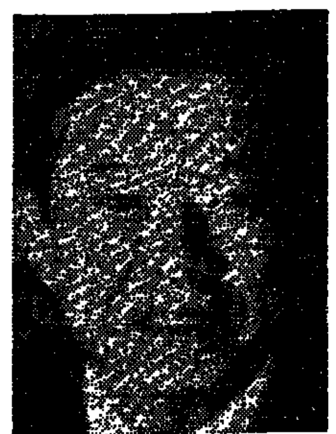
Mr Yamaguchi says there is no change in the commitment NTT has fostered since privatisation to becoming more customer-orientated. Similarly, he says there will be no change in NTT's plans to expand new high-technology businesses, a strategy which was close to the heart of Mr Shinto and which led directly to NTT's involvement with Recruit.

Recruit leased high-speed data transmission circuits from NTT and rented them out to clients. The business has continued in the wake of the scandal, though Recruit is finding it difficult securing new customers because of the affair.

At the same time as Mr Yamaguchi is dealing with the Recruit fall-out, he is under pressure from three other directions – increasing competition in Japanese telecommunications, growing demands for a break-up of NTT, and preparations for the planned sale of another tranche of government-owned NTT stock later this year.

Last year, NTT reported a 39 per cent increase in pre-tax profits which catapulted it to the top of the earnings table, above such giants as Nomura Securities and Toyota Motor. In the year to March, profits dropped 14 per cent to Y425bn.

Despite the strength of the expanding Japanese economy, revenues were flat because NTT was forced to cut rates in response to competition from its fledgling rivals. These new companies were licensed only in 1986 in a key element of the Government's liberalisation of telecommunications.



Haruo Yamaguchi: dealing with Recruit aftermath

From six companies in 1986, the number of new carriers allowed to install their own circuits has soared to 39. By concentrating on the most profitable parts of the market, especially long-distance calls, they have hit NTT's profits hard. NTT says that on the lucrative corridor linking Tokyo, Nagoya and Osaka, the new companies' share has climbed from 2 per cent in 1988 to 9 per cent in 1989. Mr Yamaguchi says that at peak times the new companies' share hits 30 per cent.

NTT expects no end to the pressure on its long-distance revenues.

Quite apart from competition, the Government is keen to see more rate cuts for the sake of promoting the economic development of some of the remote, investment-starved corners of Japan.

In response, NTT is stepping up marketing – through the Best Service campaign – and cutting costs. The payroll has fallen from 297,000 two years ago to 280,000. It will fall further. The group is also investing in new services. This month it introduced Green Communication System – a mobile telephone for golfers, complete with optical fibre connections instead of wires to minimise the risk of lightning.

On a bigger scale, NTT has brought forward from 1992 to next year the start of ISDN, an integrated digital network covering the whole of Japan suitable for linking computers.

But the group is under no illusions about the impact of competition on its financial performance. Mr Yamaguchi says revenues and profits will be level "for a while."

In the meantime, Mr Yamaguchi has to consider a review of NTT's future currently being carried out by the Ministry of Posts and Telecommunications. This was originally intended to be a post-privatisation assessment of NTT's performance. But it has rapidly become dominated by a single issue – should NTT be broken up, as AT&T was in the US, or allowed to remain a single company.

NTT's critics have long argued that a company with 280,000 staff is too big to manage. Some of them have seized on the Recruit affair as proof of fundamental weaknesses in management structure.

Mr Yamaguchi is preparing to give evidence to the ministry in the next few weeks. He intends to argue that the costs of breaking up NTT into regional companies will be very high, since the separate units will have to duplicate many services. Also, there is no good way of dealing with central operations such as NTT's highly regarded research laboratories.

"Telecommunications are not like railways," says Mr Yamaguchi, referring to the fact that Japan National Railways has been divided into regional companies prior to eventual privatisation. Regional telecommunications companies would have difficulties introducing all kinds of changes, including technological ones, simultaneously.

The argument over a possible break-up of NTT is certain to affect plans for the sale of future tranches of NTT shares. The Ministry of Finance, worried about the depressed share price, has indicated that a sale planned for this autumn will be scaled down. It may even be postponed.

Adsteam purchases 15.7% AWA stake

By Chris Sherwell in Sydney

ADELAIDE STEAMSHIP, the Australian conglomerate controlled by Mr John Spalvins, yesterday took a strategic 15.7 per cent stake in AWA, the restructured communications and electronics group formerly known as Amalgamated Wireless Australasia.

Adsteam acquired the bulk of its holding from Pacific Assets for A$1.10 per share, well above market price. AWA shares finished at A$1.15, up 10 cents on the day in an otherwise weaker market.

AWA welcomed Adsteam's presence, saying it would bring greater stability and financial strength to the group. Adsteam said the acquisition represented a long-term investment.

Broking analysts said AWA had looked a takeover possibility for some time, and suggested that Adsteam could lift its stake higher or await an offer from a mainstream electronics group – or both.

Yesterday's announcement follows a disappointing half-year profit result at the end of March, which coincided with the surprise resignation of Dr Peter Crawford as managing director.

His move was said to have been the result of differences over the restructuring programme with Mr Peter Mason, AWA's chairman, who headed Pacific Assets. AWA's other principal shareholders are the Capita Financial Group and the AMP Society.

Last year the 75-year-old group said its strategy was to concentrate on its core businesses of high technology defence and aerospace, communications systems and networks, information systems and electrical and electronic services.

The restructuring programme began in 1987 after the group reported losses of A$50m (US$37.8m) as a result of disastrous foreign exchange trading.

Goldberg buys Brick & Pipe

By Chris Sherwell

MR ABE GOLDBERG, the Australian textile magnate who recently made a tilt at Tootal in Britain, yesterday acquired control of Brick & Pipe Industries, the largest brickmaker in Victoria and South Australia.

His move into a new manufacturing sector was initiated at the end of last month, when he launched a A$4 per share offer which valued Brick & Pipe at around A$380m (US$287.4m).

His surprise offer followed another bid some two weeks earlier by Industrial Equity (IEL), the Australian arm of Sir Ron Brierley's New Zealand-based empire.

IEL had bid A$3.50 per share, the same price as it had paid the building products group CSR for its 18.2 per cent holding.

The purchase gave it an overall stake of 38 per cent.

Mr Goldberg made his counter-offer after snaring a 19.8 per cent stake through purchases from Brick & Pipe's two other major shareholders, the Swire group and Hanson Trust, leaving them with around 5 per cent each.

Mr Goldberg's move provoked confusion over whether CSR was committed to sell to IEL, which would have denied CSR shareholders the better Goldberg offer.

But IEL and CSR apparently agreed to divide the profit from selling the CSR stake to Mr Goldberg at A$4 instead of A$3.50, and he duly won control.

Hooker starts drastic asset sale programme

By Chris Sherwell

HOOKER CORPORATION, the Australian property development group controlled by Mr George Herscu, has embarked on a drastic asset sales programme to slash its burdensome gearing ratio.

Mr Herscu has said the plan aims to realise A$1bn (US$756.4m). But the figure is doubted by analysts, particularly as Hooker has effectively declared itself a forced seller in a weakening market.

Dwindling confidence in Hooker has been reflected in a *sliding share price*. From A$2.10 at the end of last year, Hooker shares fell to A$1.60 in early May. By this week they had tumbled to A$1.23.

The biggest worry has been heavy borrowing – the group's debt is put at A$1.2bn – and reported liquidity problems in its US "supermall" retail properties and retailing chains.

Earlier this year Australian Ratings, the local credit rating agency, downgraded the company to BB minus after the National Companies and Securities Commission (NCSC), Australia's stock market watchdog, objected to Hooker's accounting treatment of debt.

Mr Herscu, in last week's announcement of the A$1bn asset sale, said Hooker was "currently negotiating" the disposal of all its Australian retail activities, its US housing portfolio and the Merksamer Jewelers US retailing operation.

Also for sale were its interests in property funds management and resources. In addition, a number of property assets would be sold or joint ventured.

Still being retained, he said, were the group's housing, project development and real estate operation in Australia, and its project development, retail stores and real estate *operation in the US*.

Mr Herscu's Hersfield group acquired a controlling 54 per cent interest in Hooker in 1985. The other principal shareholders are Mr Rodney Adler's FAI Insurances, with around 8 per cent, and Barlile Corporation, controlled by a former Hooker managing director, with around 2.5 per cent.

Last year, Mr Herscu failed in an attempt to take the group private with an offer of A$2.30 per share.

● Hooker said last week it would sell a number of US industrial properties to Kajima, the large Japanese construction group.

Industrial Developments International, a Kajima subsidiary, will pay US$60m for the properties

INTERNATIONAL CAPITAL MARKETS

Record fixed-rate $ deal for BAT

By Andrew Freeman

THE LARGEST fixed-rate dollar deal by a non-US corporate borrower was launched for BAT International Finance yesterday.

New-issue activity on the Euromarkets as a whole contracted, however, with syndicate managers complaining of frustration at the lack of new paper.

The BAT $400m five-year deal, brought by Credit Suisse First Boston with a 9⅜ per cent coupon, was priced at 101⅝ to yield some 88 basis points over Treasuries. CSFB launched the deal at less 1⅞ bid, inside fees and offering a spread of 82 basis points over Treasuries.

Traders reported good demand for the bonds amid comment that the terms were extremely generous. Although there were some institutions unable to buy the paper because of BAT's credit rating, dealers reported large orders in the market from a wide range of investors.

The lead manager was quoting the paper at less 1.55 bid, well inside underwriting fees of 1⅞ per cent. In late trading brokers were bidding the bonds at less 1.49, while the spread against Treasuries was tightening to around 78 basis points.

Mr Richard Desmond, BAT Industries group treasurer, said the deal marked the company's return to the Euromarket after a long absence. The purpose of the issue was to refinance some of the short-term borrowings for last year's takeover of Farmers, the US insurance company. The issue proceeds were accordingly unswapped.

Mr Desmond commented that the deal had been priced to achieve broad distribution and a liquid benchmark and that the terms had taken the large size of the deal into account.

BAT intends to refinance more of its borrowings on the Euromarkets as opportunities arise, but is not announcing a formal funding programme.

INTERNATIONAL BONDS

In Switzerland, more straight-maturity issues encouraged sentiment, although secondary market turnover was still thin. The recent *Dai-Ichi convertible* public tranche was trading at less 4 bid, after final terms were set by Crédit Suisse, the lead manager.

The World Bank tapped the market with a SFr100m 15-year deal via Swiss Bank Corporation. The bonds came with a 6⅛ per cent coupon and were priced at 101¾. The issue is callable at its launch price after 10 years and on coupon dates thereafter at a declining rate.

The lead manager was quoting the bonds at less 1¼ bid, inside underwriting fees. There was comment from some dealers that the maturity was too long for some investors.

Shearson Lehman was the lead manager of a SFr100m 10-year deal for Great Belt, the Danish construction company. The government-guaranteed bonds offered a 6 per cent coupon and were quoted inside fees at less 1⅞ bid by the lead manager.

In Germany, prices eased around 15 pfennigs amid thin turnover worries over the strength of the US dollar. London & Edinburgh Trust came to the D-Mark sector for its *first borrowing* on the international bond market, issuing a DM100m seven-year deal via BHF-Bank.

The bonds carried a 7¼ per cent coupon and were priced at 99¾.

Dealers reported an average response because of lack of familiarity with the borrower, and the lead manager was quoting the bonds at ¼ point outside underwriting fees at less 2¾ bid. At that level, the bonds yielded around 8.08 per cent.

There was comment that it was possible to conduct attractive asset swaps.

Late in the day, a L100bn three-year issue was launched for Swedish Export Credit (SEK), with Italian International Bank as the bookrunner and Bankers Trust and Monte Dei Paschi di Siena as joint lead managers.

The bonds came with a 12¾ per cent coupon and were quoted at less 1⅜ bid, on fees.

● Daiwa Bank (Capital Management) yesterday began making market in Euroyen bonds.

NEW INTERNATIONAL BOND ISSUES

Borrower	Amount m.	Coupon %	Price	Maturity	Fees	Book runner
US DOLLARS						
BAT Int. Finance(a)◆	400	9⅜	101⅝	1994	1⅞/1¼	CSFB
Nippon Sheet Glass Co.♦	250	(4⅜)	100	1993	2¼/1½	Daiwa Europe
Omron Tateisi Electronics♦	250	(4⅜)	100	1993	2¼/1½	Nomura Int.
Nippon Oil & Fats Co.♦	150	(4½)	100	1993	2¼/1½	Yamaichi Int. (Europe)
Dai-Ichi Kangyo Bk(b)§◆	300	3⅞	100	2004	2½/1½	DKB Int.
Ube Industries(c)♦◆	400	4	100	1993	2¼/1½	Yamaichi Int. (Europe)
Kobe Steel(c)♦◆	300	4	100	1993	2¼/1½	Yamaichi Int. (Europe)
Kobe Steel(c)♦◆	300	4	100	1993	2¼/1½	Nomura (Singapore)
Nikon Corp.(c)♦◆	300	4	100	1993	2¼/1½	Nikko Secs. (Europe)
Nichirei Corp.(c)♦◆	150	4⅛	100	1993	2¼/1½	Nomura Int.
Yokohama Rubber Co.(c)♦◆	120	4⅛	100	1993	2¼/1½	Yamaichi Int. (Europe)
Amada Sonoike Co.(c)♦◆	100	4⅛	100	1993	2¼/1½	Nomura Int.
AUSTRALIAN DOLLARS						
Johnson & Johnson(a)◆	50	18⅜	101.95	1990	1⅝	Bankers Trust Int.
D-MARKS						
London & Edinburgh Trust◆	100	7½	99¾	1996	2¼/1½	BHF-Bank
Dai-Ichi Kangyo Bank(b)§◆	200	2⅝	100	1996	2¼/1⅝	Dresdner Bank
SWISS FRANCS						
World Bank(d)◆	100	6⅛	101¾	2004	n/a	SBC
Great Belt (Denmark)(a)◆	100	6	101⅛	1999	2⅝/1¼	Shearson Lehman Hutton
Nippon Light Metal(h)★★§	200	(Zero)	100	1993	n/a	Credit Suisse
Dai-Ichi Kangyo Bk(e)§◆	300	½	100	1993	n/a	Credit Suisse
Dai-Ichi Kangyo Bk(f)★★§◆	600	Zero	100	1993	n/a	Credit Suisse
Dai-Ichi Kangyo Bk(g)★★§◆	100	⅜	100	1993	n/a	Dai-Ichi Kangyo Bank
LIRE						
Swedish Export Credit◆	100bn	12¾	101⅛	1992	1⅜/⅞	Italian International Bk

★★Private placement. ♦With equity warrants. §Convertible. ◆Final terms. a) Non-callable. b) Coupon fixed as indicated. c) Coupon cut by ⅜% from indication. d) Call after 10 years at 101¾ declining ⅜% p.a. e) Coupon and put option fixed as indicated. Yield to put 2.785%. f) Coupon fixed as indicated. Yield to put cut by ⅛ to yield 2.971%. g) Coupon fixed as indicated. Yield to put 2.818%. h) Indicated yield to put 3.26%.

FT INTERNATIONAL BOND SERVICE

Listed are the latest international bonds for which there is an adequate secondary market.

Closing prices on June 6

US DOLLAR STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Alberta 9⅜ 95	600	101⅝	102⅛	0	+1⅜	8.96
Austria 9⅝ 93	140	101¾	102⅜	+0⅛	+1⅛	8.96
B.F.C.E. 7 92	180	†94⅞	95⅛	0	+0¾	9.12
B.F.C.E. 9¼ 95	150	100¾	101⅛	0	+1⅜	8.99
Brit. Tel. Fin. 9⅞ 98	250	†102	102½	0	+2	9.00
BP America 9¾ 99	250	†102¾	103⅛	0	+0¾	9.24
Canada 9 96	1000	†101⅛	102⅛	+0⅛	+1¼	8.61
Canadian Pac 10¾ 93	100	†101⅝	102⅛	0	0	10.15
C.C.C.E 9¼ 95	300	101⅛	101⅝	0	+1¼	8.92
C.N.C.A 9⅜ 93	150	101⅛	101½	-0⅛	+1⅛	6.03
Credit National 8¼ 93	200	97⅝	97¾	-0⅛	+1⅛	9.03
Credit National 7⅝ 92	100	95¾	96¼	+0⅛	+1⅛	9.00
Credit National 9½ 92	160	†102	102½	0	+1⅛	8.71
Dai-Ichi Kan 9⅝ 92	150	101⅛	101½	+0⅛	+1⅛	9.14
Denmark 7⅛ 92	500	95⅛	95⅝	+0⅛	+1⅛	9.08
E.E.C. 7 91	100	95⅜	95⅞	+0⅛	+0⅞	9.00
E.E.C. 7¼ 93	250	†94⅝	95	-0⅛	+1	8.94
E.E.C. 10 93	140	103¼	103½	0	+1	8.90
E.I.B. 7⅝ 93	100	94¾	95¼	-0⅛	+1⅛	8.99
E.I.B. 9¾ 97	150	†102½	102⅞	0	+1½	8.90
Eurofima 10⅛ 93	100	†103⅝	104	-0⅛	+1	8.90
Elec. De France 9 98	200	99¾	100¼	-0⅛	+1½	8.99
Elec. De France 9½ 99	200	102⅞	103⅛	0	+2	8.99
Finland 7⅞ 97	200	†94⅛	94⅝	0	+2	8.91
Finn.Exp.Cd. 8½ 92	200	†98¼	98¾	+0⅛	+0⅞	9.11
Finn. Exp. Cd. 9⅝ 95	200	101⅛	101½	0	+1½	9.06
Ford Motor Credit 8 91	250	*†97¼	97¾	0	0	9.71
Gen.Elec.Cap.Corp. 9 93	500	*†98½	98½	0	0	9.40
Gen.Elec.Cap.Crp.10 1/2 91	300	†102⅛	102½	0	+0⅞	9.03
Gen.Mtrs.Corp. 9⅛ 92	200	†99½	100	0	+1¼	9.20
IBM Credit Corp. 8⅞ 91	250	99½	100¼	+0⅛	+0⅞	8.95
IBM Credit Corp. 9½ 92	250	101⅜	101¾	0	+0¾	8.82
IBM Credit Corp. 10 92	200	102¾	103⅛	0	+1	8.78
Italy 9½ 95	1000	†102	102½	0	+1¼	9.00
Italy 9⅞ 99	1000	†103¼	103⅝	-0⅛	+1½	9.06
Japan Dev. Bank 10 96	200	105	105⅜	0	+1⅜	8.97
L.T.C.B.of Japan 9¼ 92	200	100⅜	100⅝	-0⅛	+2	9.08
Metropolis Tokyo 9½ 93	200	101⅞	102⅜	+0⅛	+1⅝	8.75
Nippon Tel.&Tel. 9⅝ 98	250	102⅛	102⅝	0	+1⅝	8.98
Norway 8¾ 93	500	99¼	99¾	0	+1⅜	8.89
Portugal 8¼ 91	300	†97½	98	-0⅛	+0½	9.64
Prudential Crp. 8¾ 94	125	†100	100½	0	+1½	8.68
State Bk S Aust 9¼ 93	100	*†99¼	99¾	0	0	9.47
Sumitomo Bank 9⅝ 92	150	†101	101½	0	+1	9.14
Sweden 7 91	250	†95⅝	96⅛	0	+0¾	9.00
Sweden 8¾ 96	200	99	99½	0	+1¼	8.89
Sweden 8½ 92	200	*†97½	97½	0	0	9.41
Toyota 9½ 91	200	100⅞	101¼	0	+1¼	9.00
Victorian Rep 11⅜ 92	150	†105½	106	0	+0⅞	9.26
World Bank 7 92	300	†95⅜	95⅞	-0⅛	+0⅞	8.90
World Bank 9 97	300	100⅛	100½	0	+1⅝	8.94
World Bank 9 93	300	100⅞	101¼	+0⅛	+1¼	8.69
World Bank 9¼ 98	300	101⅝	102	0	+1⅜	8.93
World Bank 9⅝ 99	500	104⅛	104⅜	+0⅛	+1⅝	8.92
World Bank 9¾ 96	300	103⅞	104¼	0	+1⅛	0.77

Average price change... On day +0 on week +1⅛

DEUTSCHE MARK STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Asian Dev. BK. 6 94	200	94⅝	95⅛	+0¼	+0¾	7.11
Austria 6¼ 99	750	97½	97¾	-0¼	+0⅜	7.09
Bank of Tokyo 5¾ 93	100	96¼	96¾	+0¼	+1¼	6.83
Commerzbank o/s. 5⅞ 93	300	94¼	94¾	-0⅜	0	7.15
Credit Foncier 6¾ 99	500	97½	97¾	-0¼	+0⅞	8.10
Degussa Int. 6⅛ 97	200	93⅜	94⅛	+0¼	+1½	7.16
E.I.B 5½ 98	150	89	89⅝	-0⅜	+0⅜	7.15
E.I.B. 6¼ 99	600	93½	94	-0¼	+0½	7.16
E.I.B. 6⅛ 96	300	94⅞	95⅜	-0⅛	+0¾	7.04
E.I.B. 6½ 99	300	95⅜	96⅛	-0⅛	+0¾	7.11
E.I.B. 6⅞ 95	300	100	100⅝	+0⅛	+1¼	6.79
Euro.Coal& Steel 5⅞ 97	175	92⅞	93⅜	-0¼	+0¾	7.12
Eurofima 6¼ 96	100	95	95⅝	0	+1⅛	7.11
Elec De France 5¾ 97	300	91⅞	92⅝	0	+2½	7.04
Forsmark Krtg. 5⅞ 93	200	93¾	94	+0¼	+0⅜	7.12
Hydro-Quebec 6⅜ 99	300	97½	97¾	-0¼	+0⅞	7.09
Japan Dev. Bk. 5⅝ 95	300	91⅝	92⅛	+0¼	+0⅜	7.08
Japan Finance 5⅛ 97	100	91¼	91⅞	-0⅜	-0⅛	7.20
Ireland 6½ 97	300	94⅜	94⅞	+0⅛	+0¼	7.42
Malaysia 6¼ 94	150	95⅝	96⅛	0	0	7.22
Nat. West BK. PLC 6 98	300	91⅝	92⅛	0	+0⅝	7.25
N.H.L. Finance 6¼ 95	200	†93⅛	93⅝	0	0	7.58
Nippon Telg.&Tel. 6 95	400	95⅜	96⅛	-0¼	-0⅛	6.38
Oesters. Kontbk. 5 93	300	94½	95¼	-0¼	0	6.61
Portugal 5⅞ 92	150	95⅛	96¼	+0⅛	-1⅛	7.25
Portugal 6⅝ 95	150	97⅞	98¼	0	-0⅝	7.08
Privatbanken 5¼ 93	150	93⅛	93⅝	-0¼	+0¼	7.29
Royal Insurance 5½ 92	300	96	96½	+0¼	+0⅞	6.99
Soc Cent Nuclear 7¼ 95	150	98⅞	99⅝	-0⅛	-0⅝	7.40
Turkey 6½ 95	500	93⅝	94½	-0⅛	+0¼	7.77
Union Bk.Finland 5½ 94	200	93⅜	94⅞	0	-0⅜	7.05
Westlb. Finance 5 93	200	†92⅛	93¼	0	+0¼	7.19
World BK. 6⅛ 97	600	95⅛	95⅞	-0⅛	+0¼	7.34

Average price change... On day -0⅛ on week +0⅝

SWISS FRANC STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
African Dev.Bk. 5 96	150	†94	94½	+0½	+1⅜	6.01
Asfinag 5 03	100	†90	90¼	-0½	0	6.05
B.F.C.E. 4½ 98	200	†90¼	91	0	+1⅛	5.86
B.M.W.Fin.Neth. 5 13	150	†87½	87¾	-0¼	+1⅜	5.99
Britannia B/S. 4⅛ 94	100	†91½	92½	+0¼	+2½	6.15
CIR. Int. W/W 3 93	125	†88	88¼	+0½	0	6.36
Credit Lyonnais 4¾ 00	100	†87	88	+0½	+2½	6.37
E.I.B 4⅝ 98	150	†89¼	90¼	-0⅛	+0¼	6.09
Fletcher Chall. 4⅞ 98	150	†88½	89½	0	+0⅝	6.55
Kobe City 4⅝ 98	150	†91½	92	-0¼	+1½	5.82
Leeds Perm. B/S. 4⅛ 93	200	†92¼	92½	+0⅛	+1	6.41
Malaysia 5¼ 98	100	†91	92	+1⅜	+5⅛	6.52
Maxwell Comm.Crp. 5 95	150	†85½	86	+1	+1	8.08
Nat. Bk. Hungary 5½ 94	75	†94	95	+0½	+0⅛	6.71
Nationwide Ang.B/S. 4 93	200	†90½	91¼	0	-0⅛	6.65
Nippon Telg.&Tel.4⅛ 95	200	†94	95	+1½	+2¾	5.31
Oesters.Ktbk. 5 03	75	†90	92	-0½	-0¼	5.96
Prov. Newfoundland 5 03	150	†91	92	+1¼	+1½	5.88
Thailand 4⅝ 95	200	†90	91	-1½	-0½	6.56
World Bank 5 03	150	†92	93	+0½	+4⅛	5.79

Average price change... On day +0¼ on week +1¼

YEN STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Canada 6⅛ 91	80	101¼	101½	-0⅛	0	5.24
Canada 5⅝ 93	80	101⅝	101⅞	-0¼	+0⅛	5.14
Eurofima 5 1995	20	98⅞	99¼	-0¼	0	5.20
E.I.B. 4⅞ 93	30	98⅛	98¾	-0⅛	0	5.28
Ireland 5⅛ 93	30	99⅞	100¼	0	+0⅛	5.12
Norway 5⅛ 95	50	99⅞	100⅛	-0⅛	0	5.12
Sweden 4⅝ 93	50	98⅛	98⅝	0	+0½	5.13
World Bank 5⅛ 98	10	98¾	99⅜	-0⅛	+0⅛	5.27
World Bank 7 94	20	107⅜	107⅞	-0⅛	0	5.19

Average price change... On day -0⅛ on week +0⅛

OTHER STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Abbey Nat.BS.10¼ 93 £	50	92¾	93⅜	0	-1⅛	12.71
Abbey Nat. 11⅜ 95 £	100	96¾	97⅜	0	-1⅛	12.35
Alg. Bk. Ned. 5½ 92 FL	150	94⅝	95⅛	-0⅛	0	7.66
Alg. Bk. Ned. 5¾ 93 FL	200	93⅞	94⅜	+0¼	0	7.59
Austria 7½ 94 ECU	100	95⅛	95⅝	-0⅛	+0¼	8.71
Bk.Nova Scot.14⅜ 90 A$	75	95	96	0	-0¼	17.89
Barclays Aus.13½ 91 A$	100	94⅝	95⅛	0	-0¼	16.16
Belgium 8¼ 94 Ecu	150	97⅝	98⅛	-0⅛	+0⅜	8.67
BP Capital 9¾ 93 £	100	92⅛	92⅝	0	-0⅞	12.33
British Airways 10 98 £	100	88¾	89¼	0	-1⅞	12.09
Buhrmann-Tet. 6⅜ 93 FL	100	94¾	95⅜	-0¼	+0½	7.84
Comm.Bk.Aust. 12⅝ 93A$	100	†92½	93	-0⅛	+0½	15.18
Coop.Ctr.Rabo.6¼ 93 FL	100	96⅞	97⅜	-0⅛	+0⅜	7.16
Cr.Local France 9¼ 92Ecu	100	101	101½	+0⅜	+0⅛	8.75
Deut. Bk.Aus. 13⅜ 93 A$	125	93⅜	93⅞	+0⅛	+0⅛	15.37
Deutsche Bk.Fin. 15 94 A$	100	101⅜	101⅞	+0¼	+0⅝	14.48
Eastman Kodak 13 90 A$	100	95⅛	95½	+0¼	+0⅜	17.48
E.I.B. 7 96 LFr	100	96¾	97¾	0	0	7.53
E.I.B. 9 99 Ecu	150	100⅜	101	0	+0⅝	8.90
Eurofima 7⅜ 94 Ecu	100	95½	96	-0⅛	+0¼	8.76
Export Dv.Crp.8¾ 92Ecu	100	99¾	100¼	—	+0¼	8.74
Fed.Bus.Dv.Bk.9¾ 92 C$	75	†98½	99	+0⅝	+1¼	10.25
Fed.Bus.Dv.Bk.10½ 93C$	50	100⅝	101	+0⅜	+1⅜	10.29
Ferrv. Stato 7⅜ 93 Ecu	100	96	96½	-0¼	+0¼	8.91
Ford Cr.Can.10¾ 93 C$	100	†100½	101	+0⅞	+1¼	10.46
Ford Cred.Can.10⅞ 96C$	125	102	102½	+0½	+1½	10.37
Ford Mtr.Cred.7⅞ 93Ecu	100	96⅛	96⅝	-0¼	0	9.06
G.M.A.C. 9¾ 93 C$	150	†97¼	97¾	+0¼	+1⅛	10.55
Hydro-Quebec 11 99 C$	400	104	104¼	+0⅜	+1⅜	10.29
Lloyds Bank 10¼ 98 £	150	90	90½	0	-1⅜	12.09
Lloyds Bank 11⅜ 98 £	100	93⅜	93⅞	0	-1⅜	12.53
Montreal Tst.10⅜ 93 C$	100	†98¾	99¼	+0⅛	0	11.05
Morgan Guar.Tst. 11 91 C$	150	100¼	100⅝	+0⅛	+1	10.55
Nat. Aus. Bk. 14⅜ 94A$	100	98⅜	98⅞	+0⅜	+1¼	15.11
New Zealand 9½ 93 £	100	91¼	91⅝	-0⅛	-0⅞	12.41
Philips Gloeil. 6 93 FL	300	94¼	94¾	-0¼	0	7.58
Privatbanken 7½ 94 LFr	500	97⅞	98⅞	0	0	7.91
Royal Bk.Scot.10⅜ 98 £	125	92¼	92¾	0	-1½	12.09
Saskatchewan 9⅞ 91 C$	150	†98½	99	+0⅜	+1¼	10.53
Saskatchewan 10¼ 93 C$	200	99⅜	99¾	+0⅜	+1	10.36
State Bk.NSW. 13⅞ 93A$	100	94½	95	+0½	+0½	15.50
Sweden 15 94 A$	100	100⅞	101⅜	+0¼	+0⅝	14.64
Toyota Mtr.Cr.11⅜ 92C$	150	102¼	102¾	+0¼	+1	10.35
World Bank 13⅜ 92 A$	100	98⅜	98¾	+0¼	+0¼	13.96
Zentrspk. 13¼ 93 A$	75	†94⅝	95⅛	+0¼	+0¼	14.88

FLOATING RATE NOTES	Spread	Bid	Offer	C.dte	C.cpn
Alliance & Leic.Bld 94 £	.08	99.82	99.87	18/07	13.08
Bank of Greece 99 US$	0⅛	99.66	99.75	8/09	10.62
Belgium 91 US$	0	100.21	100.31	19/08	9.38
Chelt.& Gloucester 94 £	.063	99.83	99.87	30/08	14.06
Credit Foncier 98 US$	.063	100.32	100.42	20/10	10.16
Dresdner Finance 99 DM	.031	99.91	100.01	27/07	6.59
EEC 3 92 DM	0	100.48	100.58	20/08	5.63
Halifax BS 94 £	.1	99.83	99.88	6/08	12.97
Inv. In Industry 94 £	0⅛	99.99	100.09	24/08	14.06
Leeds Perm. B/S. 94 £	0⅛	100.03	100.08	13/07	13.34
Midland Bank 01 £	.1	98.33	98.63	11/08	12.97
Milk Mkt.Brd. 5 93 £	0⅛	99.92	99.97	30/06	13.06
New Zealand 5 97 £	.07	99.97	100.07	22/08	13.19
State Bk. Nsw. 98 US$	.188	100.44	100.54	11/08	9.87
Woolwich Equit.BS. 93 £	0⅛	100.00	100.05	13/07	13.37
Woolwich 5 95 £	0⅛	99.86	99.91	22/08	13¼

Average price change... On day +0.00 on week +0.05

CONVERTIBLE BONDS	Cnv. date	Cnv. price	Bid	Offer	Chg. day	Prem
Alcoa 6¼ 02 US$	8/87	62.	114¼	115¼	-1⅛	10.08
Amer. Brands 7⅛ 02 US$	†9/87	56.7	123	124	-0⅞	2.23
Ashikaga Bank 2¾ 02 US$	4/87	967.	126⅛	127⅛	-2¼	3.03
Asics 5 92 DM	12/83	472.7	264½	265⅞	0	7.33
CBS. Inc. 5 02 US$	4/87	200.	103½	104⅛	-1⅜	2.73
Primerica 5½ 02 US$	4/87	66.75	67⅞	68⅞	+0⅛	96.30
Eng.China Clay 6½ 03 £	9/88	4.8	100⅝	101⅝	-1⅝	3.06
Fujitsu 3 99 US$	5/84	1106.	218⅝	219⅝	-7⅛	-3.24
Land Secs. 6¾ 02 £	6/87	6.72	93⅛	94⅛	0	14.60
Minolta Camera 2¼ 94DM	2/86	1004.	113¾	114⅝	+0⅛	5.70
MCA Inc 5½ 02 US$	9/87	69.62	92	93	-0⅜	17.89
Mitsubishi Bk. 3½ 04US$	5/89	3266.	93	94	-0⅞	3.32
Mitsui Trust 2⅜ 01 US$	10/86	1903.	120	121½	-1½	4.17
Next Plc 5⅜ 03 £	11/87	4.5	98⅛	99⅛	0	192.47
Nishi Nipp.Bk 2⅞ 03 US$	4/88	884.	109⅝	110⅝	-0⅝	-2.39
Omron Tateisi 2⅜ 02 US$	4/87	1310.	232⅞	233⅞	-3¼	-2.85
Ranks Hovis 4⅜ 03 £	1/88	3.5	122⅛	123⅛	-0⅞	-1.46
Redland 7¼ 02 £	1/87	5.4	106⅛	107⅛	-0⅞	1.25
Saatchi&Saatchi 6⅛ 03 £	†10/89	4.41	91½	92½	+0⅛	32.16
Sumitomo Bank 3¼ 04 US$	2/89	4296.	85⅝	86⅝	-1⅛	17.20
Texas Inst. 2¾ 02 US$	9/87	82.87	77	78	-0⅞	48.50
W.R. Grace 6½ 02 US$	9/87	42.12	94⅝	95⅝	0	20.63

* No information available-previous day's price

† Only one market maker supplied a price

Straight Bonds: The yield is the yield to redemption of the mid-price; the amount issued is in millions of currency units except for Yen bonds where it is in billions. Change on week=Change over price a week earlier.

Floating Rate Notes: Denominated in dollars unless otherwise indicated. Coupon shown is minimum. C.dte=Date next coupon becomes effective. Spread=Margin above six-month offered rate (‡three-month; §above mean rate) for US dollars. C.cpn=The current coupon.

Convertible Bonds: Denominated in dollars unless otherwise indicated. Chg. day=Change on day. Cnv date=First date of conversion into shares. Cnv. price=Nominal amount of bond per share expressed in currency of share at conversion rate fixed at issue. Prem=Percentage premium of the current effective price of acquiring shares via the bond over the most recent price of the shares.

Seoul set to clear Sammi Eurobond

By Maggie Ford in Seoul

FOLLOWING the South Korean Ministry of Finance's decision to raise the capital of the Korea Fund, listed on the New York Stock Exchange, the ministry is shortly expected to approve the issue of the country's first bond with warrants.

The Korea Fund, in which foreigners can invest indirectly in South Korean equities, was set up in 1984 with capital of $60m, later raised to $100m. Its capital will now be increased to $150m.

Approval of the C$50m (US$41.6m) bond, to be issued on the Euromarket, will enable Sammi Steel, a specialty steel maker based in Seoul, to complete the financing for its purchase of a subsidiary of Rio Algom, the Canadian company, announced last month.

Sammi's acquisition, for C$250m, is the first big foreign purchase by a South Korean company. The deal involves the sale of Rio Algom's Atlas Specialty Steel subsidiary and will make Sammi the largest specialty steel maker in the world.

Sammi is believed to be interested in the technology offered by Atlas, and in opportunities to expand its export markets under the US-Canada trade pact.

The company is the second-largest South Korean steelmaker and a big supplier of special steels to Hyundai Motor, the South Korean car maker which recently opened a plant in Canada.

The South Korean Government has encouraged companies to open plants abroad to avoid trade friction in export markets.

South Korean steelmakers, including Posco, the state controlled but partially privatised market leader, have been enjoying record profits due to the sharp rise in domestic demand as a result of South Korea's phenomenal growth in both exports and domestic demand.

Rio Algom made operating income of C$15.7m on sales of C$449.3m in 1987 and has produced steadily improving results over the past three years.

The deal is to be financed by a combination of a C$200m syndicated loan arranged by three leading South Korean banks, along with the C$50m bond.

South Korean convertible bonds have become increasingly popular since the Government announced that, in 1991, foreign investors holding bonds will be allowed to convert them into shares on the Seoul stock market.

At present, the market is closed to foreign investors, except through the bonds and two funds, including the Korea Fund, all of which trade at a premium.

The decision by Sammi to buy a foreign company rather than open up its own plant follows increasing interest among local business groups in foreign mergers and acquisitions.

Thailand approves Europaper plan

THE Thai Cabinet has approved a Finance Ministry plan to issue up to US$300m worth of Eurocommercial paper this month, Reuter reports from Bangkok.

A government spokesman said the paper, of up to one-year maturity and redeemable in US dollars, yen, Ecus or other currencies, was expected to carry yields below London interbank offered rates.

The spokesman said the ministry planned the issue to raise short-term funds for Thai state enterprises which would use them to refinance their outstanding, higher-cost debts

INTERNATIONAL CAPITAL MARKETS

US Treasuries unmoved by lower Fed funds range

By Janet Bush in New York and Stephen Fidler and Andrew Freeman in London

THE US Federal Reserve yesterday signalled clearly that it has eased monetary conditions and has pushed its target range for Fed Funds around ¼ point lower to perhaps a range of 9½ per cent to 9¾ per cent.

The reaction in the Treasury bond market was undramatic

GOVERNMENT BONDS

as the easier Fed Funds rate on Monday had convinced many in the market that the Fed was already easing policy a notch.

In late trading, the short end of the yield curve was around ⅛ point lower while the benchmark long bond was quoted as much as ⅜ point higher. The long bond was 11/32 point up to yield 8.40 per cent.

Fed Funds traded between 9⅝ per cent and 9¼ per cent yesterday. The Fed's intervention time passed without the announcement of a draining operation through matched sales which would have been expected if policy was unchanged.

The upward bias at the long end of the market was attributed more to continued strength in the dollar than the confirmation of easier monetary policy which has been built into the rate structure in the bond market for weeks. Indeed, short-term rates have already discounted a much more aggressive easing move by the Fed.

Although there has been a mounting body of evidence that the economy is slowing and the dollar remains well bid, inflation still remains above acceptable levels as far as the Fed is concerned. It seems unlikely, given the heated debate within the Fed on this limited and cautious move, that any further easing can be quickly agreed on.

The recent bonds rally has been shared by the short end of the yield curve which is trading at yields substantially below even the new Fed Funds rate target. The yield on the 8.75 per cent 1991 issue was yesterday quoted at 8.40 per cent compared with a Fed Funds rate of 9⅝ per cent.

IN MANY European bond markets, the swings of the dollar provided the main focus of activity. As the US currency surged in morning trading, so the markets lost ground. In the afternoon, prices made up some of their losses as the dollar slipped again.

In West Germany, prices fell by 20-30 pfennigs in the bund market in morning trading, but had recovered 5-15 pfennigs in afternoon trading.

Although it had little impact on the market, the Bundesbank said it would make allocations tomorrow on a 35-day variable rate repurchase tender to replace $12.1bn of liquidity draining from the system.

In Paris, the market also rallied from its lows. The Matif September bond contract lost only 8 basis points on the day at 107.16.

UK government bonds had an inactive day yesterday, with prices ending largely unchanged at the shorter end of the maturity range and about ¼ point lower at the long end. There was thin turnover on the futures market.

Dealers said it was a case of old worries persisting. After a good opening, sterling reverted to its weak form amid a general lack of confidence in the government's exchange rate policy. A parliamentary debate on the economy today is expected to include a defence of sterling by Mr Nigel Lawson, the UK Chancellor.

Investors are reported to be looking ahead to inflation and average earnings figures next week. The latest round of forecasts from leading economists was pessimistic, inspiring talk of 16 per cent base rates.

BENCHMARK GOVERNMENT BONDS

		Coupon	Red Date	Price	Change	Yield	Week ago	Month ago
UK GILTS		13.500	9/92	105-17	+2/32	11.42	11.33	10.99
		9.750	1/98	94-11	-3/32	10.77	10.47	10.26
		9.000	10/08	93-13	-3/32	9.76	9.42	9.27
US TREASURY *		9.125	5/99	105-05	+4/32	8.35	8.68	9.08
		8.875	2/19	105-05	+13/32	8.40	8.63	8.95
JAPAN	No 111	4.600	6/98	95.1688	-0.202	5.40	5.48	5.34
	No 2	5.700	3/07	105.4005	-0.099	5.12	5.17	5.07
GERMANY		6.375	11/98	96.0000	-0.250	6.96	7.06	6.92
FRANCE	BTAN	8.000	1/94	96.8126	-0.052	8.85	8.99	8.84
	OAT	8.125	5/99	96.0200	-0.020	8.73	8.87	8.74
CANADA *		10.250	12/98	104.6000	-0.200	9.50	9.76	10.10
NETHERLANDS		6.7500	10/98	96.2750	-0.025	7.31	7.50	7.19
AUSTRALIA		12.000	7/99	90.9690	+0.779	13.65	14.01	13.34

London closing, *denotes New York closing
Yields: Local market standard Prices: US, UK in 32nds., others in decimal

Technical Data/ATLAS Price Sources

Salomon Inc credit facility increased

TWO internationally syndicated credits for US securities houses have been increased in size, according to Bank of America International, the lead manager, writes Stephen Fidler.

A $1bn 364-day revolving credit facility for Salomon Inc has been boosted to $1.5bn and even at that level participating banks have been modestly scaled back. The loan, arranged by Citicorp and BAIL, was mainly to back up the issue of commercial paper. A $250m three-year loan for Prudential Securities, due to be signed in London today, was also raised to $300m.

The Salomon loan carried a facility fee of 10 basis points and a margin of 25 basis points. Since the facility would be for less than a year, it carries a zero risk weighting for capital adequacy purposes.

Crédit Agricole moves into Switzerland

By William Dullforce in Geneva

CREDIT AGRICOLE, Europe's biggest banking group in terms of assets and shareholders' funds, yesterday inaugurated a branch in Geneva in its first move into the Swiss market.

This is the latest step under an internationalisation strategy for France's "farm bank," which was privatised in January 1988 and which is now owned by 92 caisses régionales.

Mr Philippe Jaffre, its director-general, said a subsidiary would be established in Luxembourg later this year and plans were ripe for Singapore and Los Angeles.

With these three installations Crédit Agricole will have footholds in 20 countries, including Tokyo, New York and London.

The Geneva branch, with an initial staff of 40, will concentrate on trade finance, foreign exchange and Treasury operations, and will try to penetrate the market for private asset management. It also aims at exploiting its regional character by raising Swiss finance for property developments across the French border.

With assets of about FFr1,300bn ($195bn) and FFr50bn in equity, Crédit Agricole ranks just behind the six biggest Japanese banks on a world scale.

It will publish consolidated accounts for the first time next year. Mr Jaffre said net consolidated earnings for 1988 would have been about FFr4bn and would need to be improved.

● The French Government plans to raise about FFr10bn of fresh cash at its next auction of Treasury debt, AP-DJ reports from Paris.

The offering is to be spread over three different tranches, covering about FFr5bn of 13-week bills, FFr2.5bn of 26-week bills and FFr2.5bn of 52-week bills.

The final total raised at the auction and for each of the respective tranches will be set in response to market demand through competitive bidding.

Settlement for all three tranches of the offering has been set for June 15.

Lloyds defines a role for SMH

Haig Simonian on the UK bank's plans for its German offshoot

WHEN Lloyds Bank of the UK bought the bulk of Schröder, Münchmeyer, Hengst (SMH), the West German private bank then still overshadowed by a massive lending scandal which later took its managing partner to jail, it seemed what bankers might politely call a "courageous" step.

Later, as the German capital markets were liberalised and foreign institutions scrambled in, opinion changed. Within two years of the January 1984 acquisition, Lloyds was judged to have paid a bargain for a healthy, if somewhat tarnished, name.

Now, after its link with Abbey Life, the UK life insurance group, it seems to be Lloyds, rather than SMH, which has altered. After quitting the UK equities and gilts market and, more recently, pulling out of US government bond trading in New York, Lloyds' attention appears to be focused more on UK retail financial services than either securities or continental Europe.

Not surprisingly, Mr Brian Pitman, Lloyds' chief executive, sees it differently.

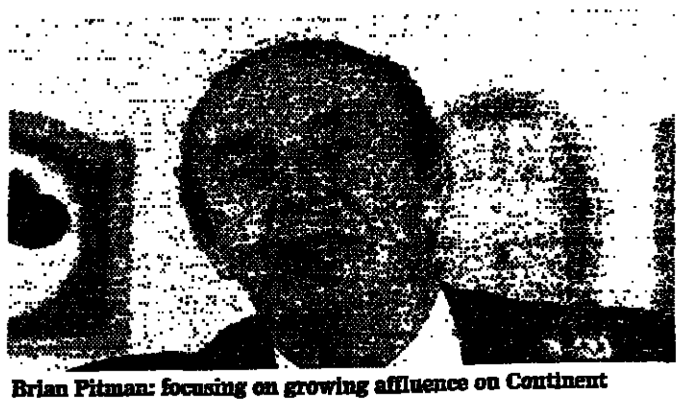
For a start, he strongly denies that the bank has quit stockbroking. "We are certainly in the business of stockbroking. Just look at our registrar and fund management businesses," he says.

Growing affluence in both the UK and continental Europe is Mr Pitman's main theme. Taking his cue from the British Government's privatisations, he sees more private money chasing an ever-wider range of investment opportunities, notably in equities.

What has already happened in the UK will be repeated on the Continent, he thinks. So for a bank like Lloyds, which believes it still has a special franchise among wealthier clients, money management and private banking are obvious territory.

Hence a role for SMH. Investors, principally – but not exclusively – from the UK, are diversifying their portfolios, especially in terms of currencies, Mr Pitman argues.

Their bank has to offer them the widest choice, meaning that Lloyds needs to be well placed not just at home but in a number of key continental markets too, notably Germany.



Brian Pitman: focusing on growing affluence on Continent

Lloyds' growing international private banking strategy revolves around its Swiss private bank, set up in 1978. The private banking business also incorporates fund management in the Channel Islands and Isle of Man, as well as operations in such plush locations as Monte Carlo, Cannes and parts of Spain.

Fund management is where SMH fits in. The German bank has been "consistently excellent" in managing other people's money, says Mr Pitman. The total is thought to amount to well over DM2bn ($1.02bn) now, and almost 10 per cent of its 410 employees are involved in research and fund management, out of 180 in securities as a whole.

Under Lloyds' plans, SMH will increasingly look after more than just its German clients' money. Already it advises Lloyds on two German funds run out of the UK.

However, neither Lloyds nor SMH wants the closer link to jeopardise the German bank's traditional contacts with UK institutional investors, which pre-date the Lloyds takeover.

Partly because of its concentration on research, SMH still has "a very strong Anglo relationship," Mr Pitman says.

Lloyds is keen to let it develop its institutional broking business. But the crucial event in SMH's relationship with its parent was undoubtedly its adoption of a partnership structure, typical of German private banking, last November.

On the surface, Lloyds' decision to sell off some of SMH's shares to its top management could be interpreted as the first sign of a plan to dispose of its stake altogether.

The reality is very different, according to the five present partners, all but one of whom were previously senior SMH executives. The change was the last stage in a process which began with SMH's gradual recovery after the takeover – when it relied heavily on the association with Lloyds – followed by consolidation after the incorporation of Lloyds' German branches in April 1985.

They say that moving to a partnership marks SMH's complete recovery by emphasising the bank's independence and private status.

The move fits both its own domestic and its parent's international ambitions. Lloyds' decision to sell up to 25 per cent of SMH to its senior management, led by the five managing partners who now have just under 5 per cent between them, is recognition of the fact that the previous arrangement was no longer suitable following SMH's recovery and Lloyds' departure from much of the securities business.

Rather than an unhappy compromise, SMH staff argued that the bank had to be run more flexibly and at greater distance from its parent.

Involving senior executives more closely by giving them a stake in the business is nothing new to Lloyds, Mr Pitman stresses. Similar steps have already been taken at its Australian and Brazilian subsidiaries. The use of equity options – the obvious method – was ruled out in Germany because of the high local capital gains tax rates.

According to Mr John Hobley, SMH's former chief executive, the decision to go for partnership also fulfilled some very German aims. With demand for good securities staff still booming in Frankfurt, broadening SMH's ownership should boost motivation and morale. The sale of shares to the partners – which Lloyds also helped to finance – may in time be extended to a broader layer of executives, leaving Lloyds with just over 75 per cent of the bank.

But, says Mr Jochen Neynaber, one of the present partners, emphasising SMH's traditional image and "character" as a German private bank should also increase its appeal to the wealthy Germans and middle-market companies, seen as its most likely clients.

The structure of SMH's business, with a heavy concentration on often privately owned middle-market companies, means the link between private banking, fund management and commercial banking is unusually strong, he explains.

Conducting business with a private bank – where the biggest clients can perhaps deal with one of the partners directly – "is something the customers like."

There is more than vanity at stake, Mr Neynaber says. The feeling of having easy access at a senior level is especially important to the sort of business people who run the successful small or medium-sized private companies which abound in Germany and which are an important part of SMH's client base.

For such a customer, SMH fits in between the local savings bank used for bread-and-butter business, and a big universal bank.

The link at SMH between wealthy private clients and their businesses is one Lloyds understands well. Mr Pitman says: "You have to ask where the private wealth comes from." The heads of medium-sized companies are seen as traditional Lloyds territory in the UK. "We've got a real expertise in that."

According to Mr Neynaber, in status-conscious Germany SMH's newly enhanced identity should help generate new corporate business as well as satisfying existing customers.

The owner of a successful private company is much more likely to find time for the partner of a private bank – who also carries personal authority – than for even the regional branch manager of a big universal bank.

No matter how great the difference in size between the two banks, things are different when owner speaks to owner, he says.

LONDON MARKET STATISTICS

FT-ACTUARIES SHARE INDICES

These indices are the joint compilation of the Financial Times, the Institute of Actuaries and the Faculty of Actuaries

	EQUITY GROUPS & SUB-SECTIONS. Figures in parentheses show number of stocks per section	Tuesday June 6 1989: Index No.	Day's Change %	Est. Earnings Yield% (Max.)	Gross Div. Yield% (Act at (25%)	Est. P/E Ratio (Net)	xd adj. 1989 to date	Mon Jun 5: Index No.	Fri Jun 2: Index No.	Thu Jun 1: Index No.	Year ago (approx): Index No.
1	CAPITAL GOODS (205)	955.59	+0.8	10.69	4.06	11.53	13.25	947.72	951.54	953.36	765.30
2	Building Materials (29)	1194.03	+1.0	11.88	4.30	10.37	17.91	1182.33	1186.07	1187.70	991.71
3	Contracting, Construction (37)	1658.73	+0.1	13.86	4.23	9.46	30.24	1657.09	1663.95	1670.87	1559.33
4	Electricals (9)	2820.64	+1.7	8.76	4.06	14.09	49.45	2772.57	2761.98	2772.30	2066.24
5	Electronics (30)	2204.51	+0.2	8.67	3.88	14.98	19.40	2200.82	2215.85	2212.54	1607.16
6	Mechanical Engineering (54)	523.25	+1.5	9.96	3.94	12.32	7.66	515.69	513.89	516.84	396.04
8	Metals and Metal Forming (7)	543.24	+0.3	14.57	5.46	7.76	1.84	541.47	544.76	543.46	465.25
9	Motors (17)	324.71	+1.5	11.49	4.68	10.22	6.83	319.98	320.39	321.29	270.88
10	Other Industrial Materials (22)	1552.46	+1.0	9.68	4.38	12.33	25.11	1537.38	1556.38	1560.48	1282.27
21	CONSUMER GROUP (187)	1203.18	+0.7	9.16	3.71	13.67	15.94	1194.40	1199.77	1198.63	1073.94
22	Brewers and Distillers (22)	1299.45	+0.2	10.45	3.72	12.03	16.84	1296.74	1299.35	1294.57	1116.69
25	Food Manufacturing (20)	1060.88	+0.9	9.65	3.90	12.98	15.69	1051.35	1055.03	1052.46	960.92
26	Food Retailing (15)	2242.85	+0.6	9.01	3.35	14.56	25.59	2228.82	2227.72	2210.41	1964.63
27	Health and Household (14)	2200.81	+0.2	6.74	2.69	16.84	21.11	2197.13	2216.86	2213.85	1809.34
29	Leisure (33)	1642.21	+1.1	7.53	3.36	16.68	21.82	1624.67	1634.75	1646.67	1311.92
31	Packaging & Paper (15)	573.13	+1.4	10.08	4.24	12.55	7.10	565.43	568.73	567.69	489.48
32	Publishing & Printing (19)	3517.33	+1.1	8.84	4.55	14.26	44.70	3478.70	3499.07	3508.73	3439.56
34	Stores (34)	795.79	+1.4	11.17	4.48	11.72	12.47	784.67	785.67	786.46	808.49
35	Textiles (15)	528.68	+0.6	11.33	5.44	10.63	13.42	525.40	535.60	535.04	575.12
40	OTHER GROUPS (94)	1088.86	+0.8	10.35	4.27	11.77	12.26	1080.47	1091.21	1091.05	878.95
41	Agencies (18)	1374.51	-0.7	6.87	2.39	18.15	14.91	1384.69	1391.20	1397.33	1153.60
42	Chemicals (22)	1262.86	+0.2	11.26	4.68	10.49	26.38	1260.06	1263.04	1259.38	1022.55
43	Conglomerates (12)	1575.02	+0.9	10.69	5.09	11.02	20.16	1561.75	1571.31	1568.96	1165.48
45	Transport (13)	2468.51	+0.5	8.37	3.57	15.55	30.81	2455.03	2469.72	2436.34	1902.16
47	Telephone Networks (2)	1047.36	+2.5	11.70	4.68	11.12	0.00	1022.00	1061.76	1086.44	942.63
48	Miscellaneous (27)	1564.34	-0.1	10.19	3.80	11.14	22.36	1566.49	1548.94	1523.80	1185.13
49	INDUSTRIAL GROUP (486)	1128.16	+0.8	9.93	3.97	12.45	14.51	1119.49	1126.10	1126.43	951.10
51	Oil & Gas (14)	2017.17	+0.9	10.31	5.50	12.09	51.08	1999.39	2011.97	2021.46	1844.61
59	500 SHARE INDEX (500)	1203.71	+0.8	9.98	4.16	12.50	17.48	1194.29	1201.40	1202.43	1026.55
61	FINANCIAL GROUP (123)	729.16	+1.0	–	5.33	–	16.71	722.22	723.76	725.70	699.65
62	Banks (8)	720.48	+1.1	24.78	6.64	5.30	21.71	712.52	712.03	718.75	670.06
65	Insurance (Life) (8)	1061.85	+1.1	–	5.62	–	29.86	1050.69	1051.81	1032.31	1017.96
66	Insurance (Composite) (7)	569.21	+0.3	–	6.02	–	16.75	567.41	569.74	570.80	531.78
67	Insurance (Brokers) (7)	988.89	+0.1	7.70	6.38	17.47	27.18	980.15	986.59	990.30	971.00
68	Merchant Banks (11)	333.42	-0.1	–	4.52	–	3.70	333.77	332.09	333.57	377.32
69	Property (52)	1294.48	+1.5	6.39	2.92	19.95	13.81	1274.91	1280.45	1285.84	1224.36
70	Other Financial (30)	363.14	+0.6	10.75	5.86	11.79	6.25	361.12	361.84	364.09	304.27
71	Investment Trusts (71)	1132.17	+0.2	–	2.88	–	12.92	1130.40	1142.50	1145.48	876.60
81	Mining Finance (2)	611.75	+0.8	10.14	4.16	10.98	10.45	606.67	611.15	610.01	533.21
91	Overseas Traders (8)	1308.59	....	11.51	5.67	9.88	34.45	1307.09	1340.78	1338.35	1129.53
99	ALL-SHARE INDEX (704)	1086.63	+0.8	–	4.30	–	17.16	1078.15	1084.39	1085.59	940.97

	Index No.	Day's Change	Day's High (a)	Day's Low (b)	Jun 5	Jun 2	Jun 1	May 31	May 30	Year ago
FT-SE 100 SHARE INDEX‡	2107.4	+18.9	2107.4	2077.6	2088.5	2102.6	2103.4	2114.4	2130.0	1820.2

FIXED INTEREST

	PRICE INDICES	Tue Jun 6	Day's change %	Mon Jun 5	xd adj. today	xd adj. 1989 to date
	British Government					
1	5 years	117.33	+0.08	117.23	–	4.91
2	5-15 years	130.93	+0.03	130.88	–	4.62
3	Over 15 years	139.89	-0.04	139.94	–	6.09
4	Irredeemables	161.47	+0.02	161.43	–	6.34
5	All stocks	128.99	+0.04	128.93	–	4.97
	Index-Linked					
6	5 years	134.18	+0.13	134.01	–	1.36
7	Over 5 years	131.31	+0.21	131.03	–	1.28
8	All stocks	131.41	+0.20	131.15	–	1.27
9	Debentures & Loans	113.15	-0.07	113.22	–	5.14
10	Preference	87.97	-0.12	88.08	–	3.04

	AVERAGE GROSS REDEMPTION YIELDS		Tue Jun 6	Mon Jun 5	Year ago (approx.)
	British Government				
1	Low	5 years	10.05	10.03	8.87
2	Coupons	15 years	9.63	9.61	9.18
3		25 years	9.46	9.44	9.01
4	Medium	5 years	11.11	11.14	9.33
5	Coupons	15 years	10.14	10.14	9.39
6		25 years	9.70	9.69	9.28
7	High	5 years	11.22	11.23	9.41
8	Coupons	15 years	10.36	10.36	9.53
9		25 years	9.89	9.88	9.25
10	Irredeemables†		9.47	9.47	9.08
	Index-Linked				
11	Inflation rate 5%	5yrs.	4.01	4.04	2.71
12	Inflation rate 5%	Over 5 yrs.	3.83	3.84	3.83
13	Inflation rate 10%	5 yrs.	3.27	3.30	1.76
14	Inflation rate 10%	Over 5 yrs.	3.66	3.67	3.67
15	Debs &	5 years	11.91	11.80	10.23
16	Loans	15 years	11.64	11.55	10.65
17		25 years	11.36	11.29	10.68
18	Preference†		10.26	10.21	9.61

‡Opening index 2081.8; 10 am 2080.4; 11 am 2084.4; Noon 2088.3; 1 pm 2089.6; 2 pm 2095.1; 3 pm 2096.9; 3.30 pm 2098.5; 4 pm 2103.0 (a) 4.59pm (b) 9.27am † Flat yield. Highs and lows record, base dates, values and constituent changes are published in Saturday issues. A list of constituents is available from the Publishers, The Financial Times, Number One, Southwark Bridge, London SE1 9HL, price 15p, by post 34p.

LONDON RECENT ISSUES

EQUITIES

[illegible]

FIXED INTEREST STOCKS

[illegible]

RIGHTS OFFERS

[illegible]

RISES AND FALLS YESTERDAY

	Rises	Falls	Same
British Funds	48	30	28
Corporations, Dominion and Foreign Bonds	9	2	31
Industrials	441	342	796
Financial and Properties	184	121	351
Oils	29	18	48
Plantations	1	3	8
Mines	65	25	89
Others	124	33	93
Totals	901	574	1,444

TRADITIONAL OPTIONS

● First Dealings May 30
● Last Dealings Jun 9
● Last Declarations Aug 31
● For settlement Sep 11

For rate indications see end of London Share Service

Calls in T. Cowie, Tuskar, FKI, Christie's, Marinex, C & W, Casket, Boddington's, Blacks Leis, Monarch Res, Amstrad, Lincoln's Hse, Trans Dev, Stonehill, Premier Cons. Puts in T. Cowie, Far East Res, Abbeycrest. P/C Tuskar, Flextech, Tuskar.

LONDON TRADED OPTIONS

STOREHOUSE took the turnover lead from Cable & Wireless on the London Traded Options Market yesterday, as dealings in general recovered stability after the sharp fall in the Hang Seng Index in Hong Kong on Monday, in reaction to events in Peking.

Overall options market business saw some improvement on the previous day's level, without reaching an out-of-the-way figure, on a total of 36,475 contracts, made up of 22,718 calls and 13,757 puts.

The dealings in Storehouse options was handled largely by one major agency broker, which carried out a deal running across from the underlying share market to the options, on the so-called "buy-write" basis. The deal comprised the buying of 2.5m shares on the underlying market at 155p, and the selling of options standing to equal this amount, in the July 140 calls. The business in Storehouse options was comprised in 42 bargains, at an average 91.8 contracts apiece.

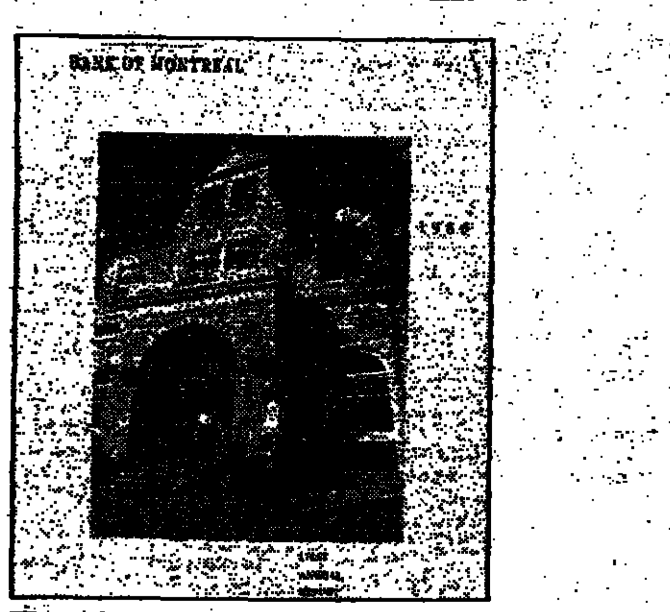
Cable & Wireless business amounted to 2,328 contracts, made up of 1,652 calls and 676 puts, as the underlying price of the share recovered 15p to 465p. On Monday there were some 4,300 contracts traded in the stock, as the underlying share price lost 89p to 450p. The most heavily traded series in the stock option were, as on Monday, those in the July 460 calls and puts, the first attracting 558 contracts and the second 223.

Turnover in the FT-SE 100 Index amounted to 7,317 contracts, consisting of 2,269 calls and 5,048 puts, with the June 2,050 puts alone finding 1,339 contracts, and the June 2150 puts 1,071. The index itself recovered 18.9 points to 2,107.4, its best of the day, having touched 2,077.6 in early dealings. Dealings in the index on the London International Financial Futures exchange offered little pull up or down.

Option	CALLS Jul	Oct	Jan	PUTS Jul	Oct	Jan
[illegible]						

Annual Update 2

Part 1 was featured on June 6th.

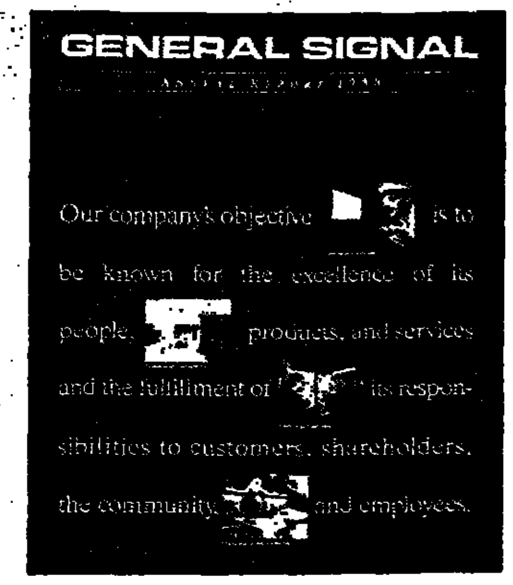


Bank of Montreal

Bank of Montreal is the third largest bank in Canada with assets of $78.9 billion. In Canada, the Bank distributes its products and services through 1,176 branches located across the country. Internationally, it operates in sixteen countries including the key financial markets of New York, London and Tokyo.

Together with its principal subsidiaries Nesbitt, Thomson Inc., a fully integrated Canadian investment dealer, and Harris Bankcorp, Inc. of Chicago, the Bank of Montreal offers a complete range of financial services to personal, commercial and institutional customers in Canada, the United States and abroad.

The Bank has paid dividends continuously since 1829.



General Signal

General Signal – an international organization with 19,000 employees at 94 manufacturing locations, including facilities in 13 foreign countries – is a leading capital equipment manufacturer for the process, electrical, transportation, semiconductor, and telecommunications industries. In 1988, foreign sales contributed $460 million to the company's total revenues of $1.76 billion; foreign assets were $200 million. With order backlogs at high levels, General Signal expects very strong financial performance in 1989. First-quarter earnings per share rose by 44 percent.

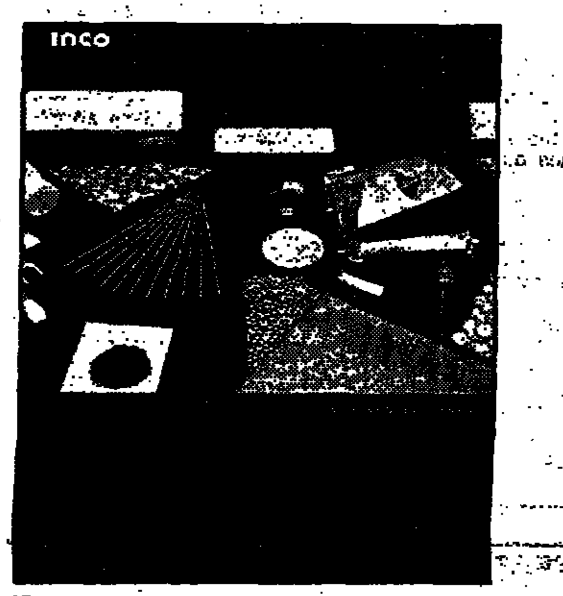
Georgia-Pacific

Georgia-Pacific Corporation, one of the world's largest paper and building products companies, posted another record year in 1988. G-P generated $865 million in cash and invested $1.6 billion in capital projects, acquisitions and an aggressive stock repurchase program. A key factor in Georgia-Pacific's performance has been the growth of the pulp and paper business which, for the first time, outearned building products for the year.

Hemlo Gold Mines Inc.

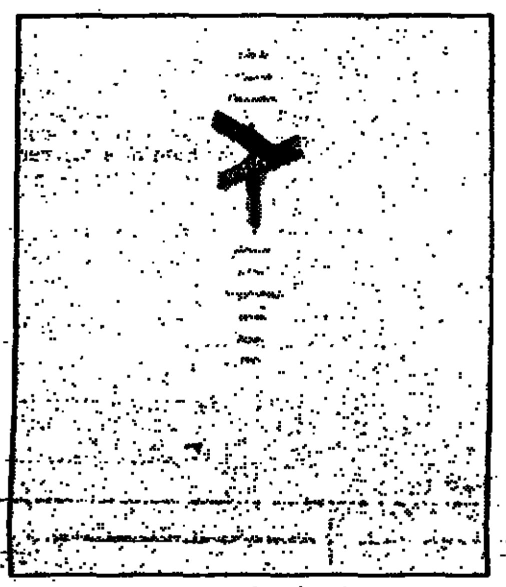
Hemlo Gold Mines Inc. owns and operates the high grade Golden Giant Mine in northwestern Ontario, one of the lowest cost gold mines in the world and one of the largest in North America. This mine has 17 years of reserves at the current production rate of 3000 tonnes per day.

Hemlo has embarked on an aggressive program of exploration and investment. It has acquired extensive property positions in northwestern Ontario, western Canada and the United States, and equity positions in several promising junior companies.



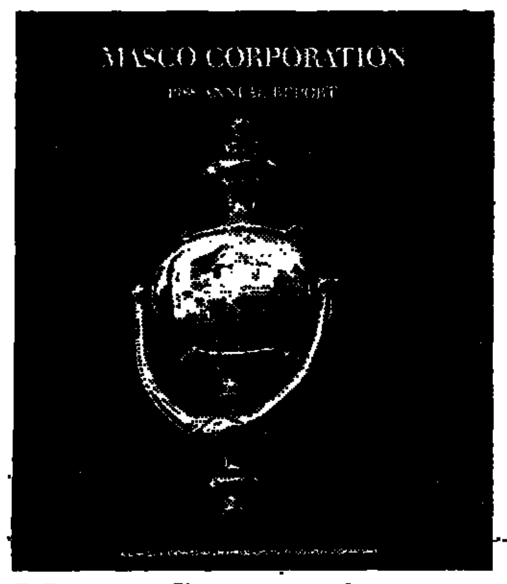
Inco

Inco Limited is the non-communist world's leading producer of nickel and a substantial producer of copper, precious metals and cobalt. Inco is also the world's largest supplier of wrought and mechanically alloyed nickel alloys as well as a leading manufacturer of blades, discs, rings and other forged and precision-machined components made from special alloy materials. In addition, the Company is a major producer of sulphuric acid and liquid sulphur dioxide, and has other interests in metals, venture capital, mining equipment manufacturing, and engineering and technology sales. In 1988 Inco had net earnings of US $735 million on net sales of US $3,263 million.



Lincoln National Corporation

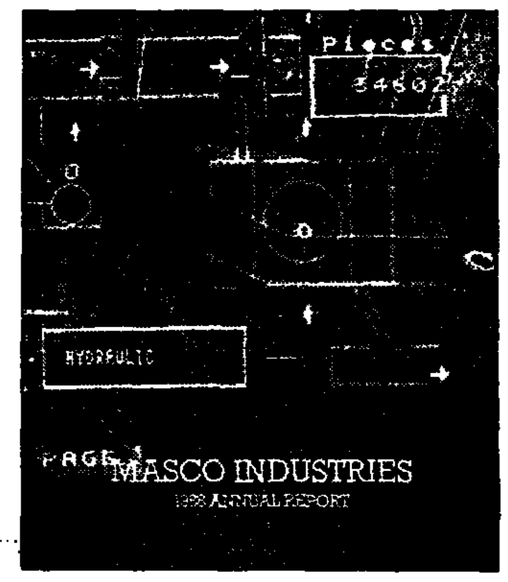
Lincoln National Corporation (NYSE: LNC) is the nation's seventh largest holding company whose subsidiaries are engaged primarily in insurance and investment services. The Corporation has assets of $21 billion with revenues exceeding $7 billion. Through its subsidiaries, it markets individual life and health insurance, reinsurance, employee benefits, annuities, property-casualty insurance and investment-related services.



Masco Corporation

"A Unique Consumer Products Growth Company"
Masco Corporation has reported 32 consecutive years of earnings increases. Sales and earnings have increased at average annual compound rates of approximately 20 percent.

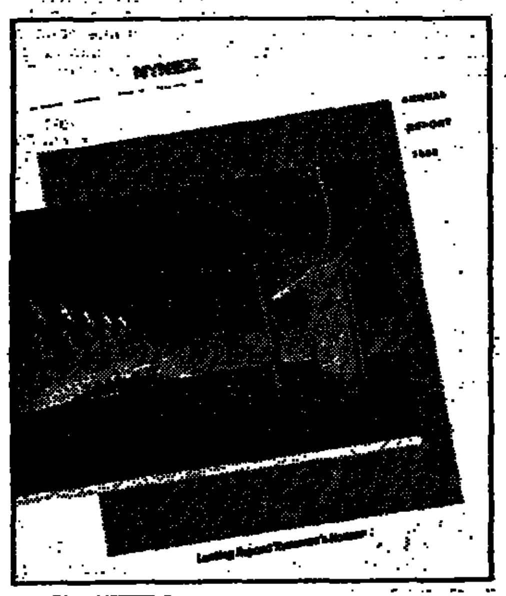
Send for our 1988 Annual Report to learn why, we believe, Masco's earnings will continue to grow at an average annual rate of 15 to 20 percent annually over the next five years, with our sales in 1993 approximating $5 billion.



Masco Industries

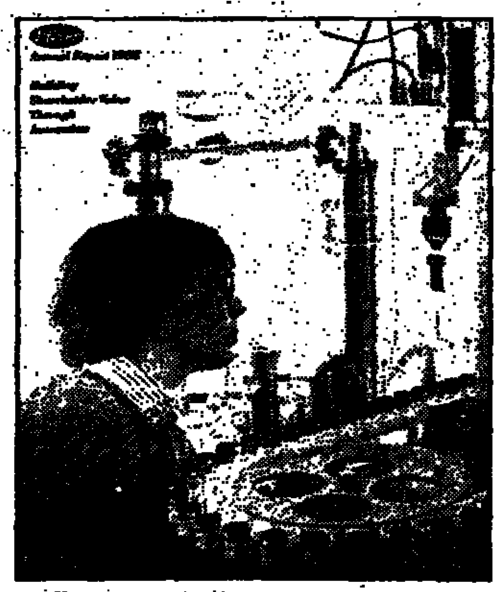
"A Unique Industrial Growth Company"
Masco Industries is a technology-based company whose corporate objective is to achieve above-average growth by utilizing our design, engineering and manufacturing skills to develop innovative processes and products for an expanding number of markets.

Our objective is to increase earnings per common share, on average, at least 20-25 percent annually, and thus to establish Masco Industries as a unique industrial growth company.



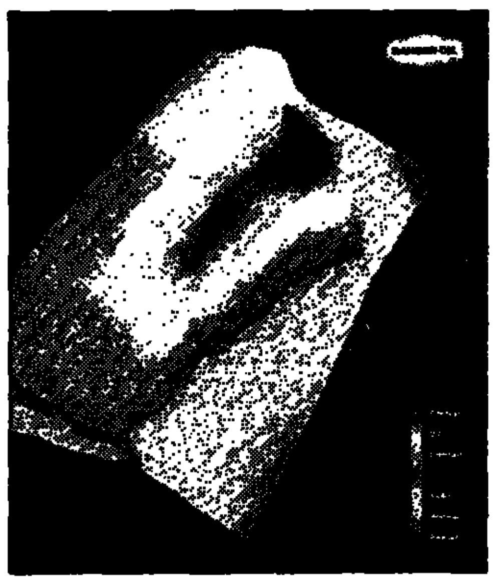
NYNEX

In just five short years, NYNEX has grown from a regional supplier of telecommunications services to a multi-faceted global leader in the information industry with an international family of companies totaling $25.4 billion in assets. Today, our New York Telephone and New England Telephone subsidiaries provide advanced network services to most of the Northeast and our ten other operating companies have become pioneers in the development of innovative business and information services, office systems, software and publishing services. For the challenges of the information age, the answer is NYNEX.



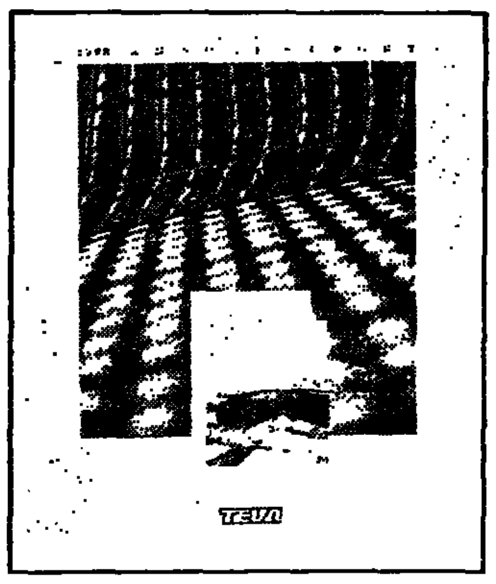
Pfizer

For Pfizer, innovation is the soundest way to build shareholder value. Our R&D spending will easily top $500 million dollars in 1989 – more than twice what we spent in 1984. Our strategy is productive. Each of our businesses now has a portfolio of important new products in development that should drive sales and earnings growth from now through the 1990s.



Ranger Oil Limited

Ranger Oil Limited, an international oil and gas company with proved reserves of 36.2 million barrels of oil and 129.8 million cubic feet of gas, earned $15.4 (U.S.) million in 1988. Ranger holds interests in producing and exploratory acreage in the North Sea (United Kingdom - 57 Blocks; Netherlands - 3 Blocks) and onshore in the United Kingdom, Canada, France and the United States. The shares of the Company are traded on the New York, Toronto, Pacific and London Stock Exchanges.



Teva Pharmaceutical Industries, Ltd.

Teva Pharmaceutical Industries, Ltd. (NASDAQ: TEVIY) develops, manufactures and markets human pharmaceuticals, pharmaceutical chemicals, medical disposables, and veterinary products. With growing U.S. presence via a joint venture with W.R. Grace & Co., Teva is the largest supplier of such products to Israel's healthcare markets. Its products are marketed in 50 countries and Teva has manufacturing facilities in Israel, the Netherlands and the U.S. Operating income for 1988 rose 81 percent on 41 percent sales gain.

Part 1 was featured on June 6th

Please send me the following Annual Reports:

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UK COMPANY NEWS

Costs of converting the Presto chain to the Safeway format have reached peak

Argyll tops £200m as expansion continues

By Maggie Urry

ARGYLL GROUP, the Safeway, Presto and Lo-Cost food retailing chain, reported a 19 per cent rise to £208.5m in pre-tax profits for the year to April 1, before exceptional costs of £29.8m (£43.5m) relating to the programme of converting Presto stores to the Safeway format.

Group sales were 8 per cent higher at £3.5bn, but the previous year included 53 weeks from the original Argyll business and 54 weeks from Safeway, acquired in February 1987.

Mr Alistair Grant, chairman, said he was "pleased but not smug" about the figures. The current year had started well.

Argyll has now converted 64 Presto stores to Safeway shops, 57 in the 1988-89 year. A further 38 conversions are planned for the current year and 60 for the year after. Further exceptional costs of £16m were expected over the next two years, probably £10m this year and £6m next.

Mr Grant said Safeway increased sales by 44 per cent on a comparable basis, with like-for-like volume growth of 2 per cent. Some of the early conversions had now tripled their profit contribution, but the more recent ones were yet to meet the objective of doubling profit. Margins from new Safeway stores were running at 70 per cent of those in established stores, while the conversions were achieving margins at 55 per cent of the base stores.

Argyll's Lo-Cost stores are attacking the limited range discount market, and Mr Grant said these were going "from strength to strength". Volume growth was 5 per cent in existing stores.

Interest receivable totalled £30.7m (£13.7m) reflecting net cash in the balance sheet of £60m, compared with shareholders funds of £516m. Investment of £300m is planned for the current year, to be financed internally.

Tony Andrews

Alistair Grant: pleased but not smug about annual figures

Earnings per share before the exceptional costs rose 23 per cent to 16.1p. A recommended final dividend of 4.1p gives a total 17 per cent higher at 6.2p.

● COMMENT

These figures are claimed to represent the year of maximum strain in Argyll's conversion into Safeway, with the group now free to concentrate again on pure retailing. The story is a plausible one: that more than half of the Safeway stores are either brand new or conversions, still working on margins more than a third lower than the mature stores of the original portfolio. As the gap closes there could be room for earnings growth of a quarter this year (post-exceptionals), putting the shares at 204p at a slight discount to the sector on a multiple of 12. Despite recent outperformance, this looks remarkably defensive.

NatWest in further US expansion programme

By Martin Dickson

NATIONAL WESTMINSTER Bank, which has built up substantial operations in the US states of New York and New Jersey, is now looking to expand into Pennsylvania by acquiring a bank there with assets of over $2bn (£1.3bn).

Mr William Knowles, chairman of National Westminster Bancorp, the US banking subsidiary of the British clearer, said in London yesterday that the bank was not currently in negotiations with any Pennsylvanian group. But it was looking at the possibility of acquiring a bank in a part of the state close to its existing operations in New Jersey. About a dozen banks could fit its requirements.

He disclosed that NatWest had approached one Pennsylvanian bank some time ago but had been rebuffed.

The gradual relaxation of US legislative barriers to inter-state banking means NatWest could operate in Pennsylvania from March next year, though Mr Knowles said it "does not feel compelled to be there on opening day." Since the late 1970s NatWest has been pursuing a strategy of gradual expansion through the north eastern US. Its most recent deal was the proposed $282m purchase of Ultra Bancorporation in New Jersey last February. It expects this to clear the regulatory hurdles by about September.

The bank is also interested in expanding into a fourth north east state, Connecticut, though no date has yet been set there for a relaxation of banking regulations.

Mr John Tugwell, chief executive of international business at NatWest in London, said the bank might ultimately double its US assets from the current $20bn. That might happen over the next five years, although no timetable had been set.

Strong all-round growth made by Great Portland

By Paul Cheeseright, Property Correspondent

GREAT PORTLAND Estates yesterday joined the list of property investment and development groups showing a strong increase in net asset values. The underlying value of its properties rose 34 per cent over its last financial year and its net asset value per share advanced 40 per cent to 488p.

In response to an increase that was higher than the market had been expecting, the shares rose 5p to 369p as property share performance broke out of its recent sluggishness.

The group is paying a final dividend of 6p for the year to last March, bringing total payments for 1988-89 to 9p, compared with 8.1p for 1987-88. Shareholders are also being offered a one-for-five scrip issue and, in a gesture of confidence, the board set out its intention to maintain the dividend at 9p on the enlarged capital.

However, Mr Richard Peskin, the chairman, noted that net asset value had more than doubled in two years. "It will be impossible to repeat this performance but a steady level of asset growth is anticipated," he said.

Pre-tax profits for the 12 months to March were £29.36m compared with £24.73m the previous year. Earnings per share came to 12p (10.6p).

The general buoyancy of the property market has come through in the amount of rents received. This rose last year to £35.59m from £28.42m the year before. With developments coming through to fruition and a series of leases coming up for rent reviews, Great Portland expects during the current year to receive rents of about £48m, nearly double thatreceived in 1986-87.

Great Portland has sought to assume a more aggressive attitude in the market place not only through the working of its own portfolio but also through the acquisition of 50 per cent of Bride Hall, the development and trading company. This investment gave last year a share in the Bride Hall profit of £3.01m against £1.21m in 1987-88.

Gearing remains at a modest 20 per cent and all of Great Portland's debt is fixed at interest rates of less than 10 per cent.

● COMMENT

Great Portland has been drawing benefit from the huge rise of property values especially in the West End, Holborn and Covent Garden districts of London where it has 59 per cent of its portfolio. Despite the likelihood of a slowdown, acknowledged by the company, there is still enough drive in the market to make certain asset values rise again this year, probably to about 555p a share. That puts the current price on a discount of 33.5 per cent, not abnormal for a property investment company under current conditions but adding emphasis to the notion that the sector is looking undervalued.

Premier up on Lasmo proceeds

By John Ridding

SHARPLY LOWER oil prices prompted a fall in pre-tax profits from £14.33m to £8.55m at Premier Consolidated Oilfields, the independent oil company, for the year to March 31. Earnings per share dropped from 2.86p to 1.69p.

However, a gain of £5.12m relating to the disposal of the company's holding in London and Scottish Marine Oil, a fellow oil independent, boosted net attributable profits to £11.67m (£14.7m).

Mr Roland Shaw, chairman, said the results were satisfactory despite an average sales price of £8.39 per barrel, 19.3 per cent lower than the previous year. This was reflected in turnover of £21.4m (£26.3m).

In the first five months of 1989 the price had improved to give an average of £10.60.

Premier said its oil find in the Gulf of Thailand, announced in December, "had the potential to be one of its biggest fields" and that it "liked what it had seen so far." It is undertaking a seismic survey and plans to have completed four to six appraisal wells by June 1990.

● COMMENT

Premier's extraordinary boost from Lasmo mirrors the 1987-88 Tricentrol windfall. This year is unlikely to see a repeat performance and although stronger prices for oil and the dollar, and expanded production at Wytch Farm, should provide a stimulus, net income is unlikely to exceed £9m. For Premier's investors, however, earnings numbers are very much a sideshow. The main event is going on in the Far East, where the 2.3m acre Thai field has the potential to transform reserves. Such eastern promise has sent the shares climbing, from around 58p in December to yesterday's 99½p. Also important is Premier's relatively strong financial base. The shares, however, are unlikely to show much further activity until results from Thailand start to emerge at the beginning of next year. But they should remain underpinned by Burmah's 29.9 per cent stake. However, Burmah's apparent reluctance to return to direct involvement in exploration means that there is currently little reason to suspect hostile intent.

De La Rue problems worse than expected

By David Waller

DE LA RUE, the security printing and electronics company yesterday followed up its February profits warning with a set of pre-tax profits which it acknowledged to be verging on the catastrophic.

In the year to March 31, pre-tax profits fell from a record £62.42m to £26.3m, on turnover up from £483.66m to £528.55m. An extremely high tax bill, combined with a hefty interest bill, helped drive earnings down from 31.1p to just 4.9p per share.

The company maintained that the problems at its Printrak and Crosfield subsidiaries, although worse than expected when they were first publicised in February, had been contained and the future of the group was bright.

As a gesture of confidence, it is proposed that the final dividend be maintained at 10p and be paid out of reserves, making an unchanged 13.25p for the year.

Despite a 15 per cent rise in Crosfield's sales last year, the profits contribution from this electronic equipment manufacturer dropped from £21.1m to £5.2m. Mr John White said that four months ago he expected the business to make £11m to £12m, but that conditions had since detiorated .

At Printrak, a manufacturer of automated fingerprint identification systems, the loss was £14.7m against a small, undisclosed profit in the previous year. At the time of the forecast, a loss of £10m was expected.

Trading problems were not confined to these two subsidiaries. Despite good performances from the core banknote printing and payment system business, profits from security products as a whole were flat because of difficulties at Remsdaq, a security systems manufacturer.

With borrowings up from £53.3m to £107.6m over the year, the interest charge climbed from £5.77m to £8.64m. The share of related company profits fell, from £8.58m to £5.31m, while the tax bill fell only slightly, from £18.38m to £17.65m. The company did not generate enough UK profits against which to write off its accumulated ACT.

De La Rue also announced yesterday that it had paid £10.7m to acquire a 50.03 per cent stake in Garny, a West German security and payments systems manufacturer.

● COMMENT

Despite significantly undershooting the £35m forecasts made at the time of the profits warning in February, De La Rue's shares actually gained yesterday, from 310p to 315p. This apparently perverse reaction to such an appalling set of figures from a major company is easily explained by the presence of de Benedetti and Maxwell. Together, they own more than 20 per cent of the shares, and despite their protestations of friendliness, can hardly be deemed reliable, long-term sharerholders under the circumstances. In a nutshell, De la Rue is a sitting duck for a predator wishing to divide the group neatly into two, the security printing side on the one hand, and the clutch of hi-tech, supposedly high-growth electronics companies on the other. The share price is way out of line with fundamentals. Assuming a pre-tax profit of £45m in the current year, the shares sit on a prospective multiple of 17, which is 50 per cent above the market average.

Peter Black abandons bid for Lambert Howarth

By John Thornhill

PETER BLACK, the consumer goods manufacturer and distributor, yesterday abandoned its takeover bid for Lambert Howarth after receiving full acceptances equivalent to only 0.63 per cent of the footware and luggage group's share capital.

However, the offer ended in some confusion yesterday as the two sides differed over whether an increased offer had been proposed in talks held over the last few days.

Black said it had been prepared to increase its offer to 215p per share on condition that this offer was approved by the Lambert board.

Mr Stephen Lister, finance director, said his company was prepared to pay this higher price for the benefits to be derived from the goodwill of Lambert's management.

But Mr Martin Jourdan, Lambert chairman, said Black's possible increased offer had only represented a basis for discussion and was never expressed as a firm offer.

"If Peter Black were serious about 215p why did they not offer it to shareholders?" he said.

The original offer, launched on April 10, valued Lambert at about £9.1m, or 160p per share.

On yesterday's announcement, Lambert's share price fell sharply to close 39p lower at 177p. Peter Black shares firmed 2p to 143p.

Sales setback for Anglia Homes

By Andrew Taylor, Construction Correspondent

ANGLIA SECURE Homes, Britain's second largest builder of sheltered housing, yesterday said that sales of retirement homes had fallen by about a third this year compared with the first five months of 1988.

The company announced pre-tax profits of £2.76m for the six months to end-March, against £2.41m last time.

Comparisons were restated to take account of the purchase of Alfred McAlpine's retirement homes business.

Mr Peter Edmondson, Anglia chairman, said the combined business had sold 187 homes during the first six months of the financial year compared with 301 in the first half of last year.

He said the market remained very difficult. Anglia would be pressed to match last year's combined sales of just over 700 units and he did not expect the housing market to show any significant recovery until the middle of next year.

The company had taken steps to boost sales by offering part exchange deals, shared equity plans and other incentives.

It axed about 52 jobs saving about £1m in overheads. It is also looking at possibles joint venture to break into new markets in the UK and overseas.

Turnover fell to £15.26m (£17.81m). Earnings per share were slightly lower at 8.6p (8.7p).

The interim dividend is maintained at 1.25p.

● COMMENT

Anglia sells its homes as far north as Leicester and as far west as Exeter. It therefore has had the very worst of housing market recession. The company argues with some justification that there remains a big market for its products. People over 65 are living longer, remain more active and are mostly wealthier than their parents were. Anglia buyers generally will have few mortgage worries and therefore should be insulated from the effects of rising interest rates. The problem has been that elderly ladies – the average age of Anglia's customers is 73 and most of them are women – face the same difficulty in selling their existing homes as everybody else in southern England. According to Anglia, cancellations, at one stage representing about 40 per cent of reservations, are currently running at just over 30 per cent. The company should be among the first housebuilders to benefit from an upturn but this is unlikely to occur this year. On pre-tax profits of just under £8.5m, Anglia is on a prospective p/e of about 8 which looks a little expensive. The shares, however, are unlikely to slip below the psychological 200p mark unless sentiment worsens or interest rates rise even further.

Reedpack beats buy-out targets with £28m profits

By Maggie Urry

REEDPACK, the office supplies, paper and packaging group formed by a management buy-out from Reed International, reported its first annual results yesterday. The figures covered an eight month period to April 2, showing operating profits of £60.1m, an interest charge of £32.1m and pre-tax profits of £28m.

Mr Peter Williams, chief executive, said the figures beat the targets set with the institutions which backed the buy-out last year. The company would be ready to float by the year end, but would wait for market conditions to be right before doing so, he said. The original flotation target was in 1991.

On a pro-forma comparable basis, turnover for the year to April 2 rose 11 per cent to £777.2m and pre-interest and tax profits were 27 per cent ahead at £70.5m. For the eight months earnings per share were 84.5p.

The buy-out for £608.6m meant the company took on a high level of debt. At the financial year end net debt was £405.7m, almost unchanged from the initial debt position, despite capital expenditure of £48.8m in the eight month period, Mr Williams said. Current year capital expenditure is expected to be £70m, financed internally.

Mr Williams said the high level of interest rates and slowdown in economic activity was now affecting the business, particularly on the packaging side. However, interest rates on 95 per cent of the group's debt had been hedged for the current year.

During the past year the office supplies division was the best performer increasing trading profits by 45.5 per cent to £20.8m, on a comparable basis. Mr Williams said all parts of the business were buoyant and margins improved.

The paper division raised trading profits by 35 per cent to £32.4m, helped by the new number six paper machine at the Aylesford site in Kent

Packaging profits were slightly lower at £28.6m (£28.9m). Increased capacity in the market allied to a slowdown in volume growth meant it was difficult to pass on cost increases, Mr Williams said, and margins fell. However, it is the division with the greatest potential to improve cost effectiveness, he added.

Sir Christopher Benson, chairman, said the group had 1,000 acres of freehold land surplus to the group's needs, valued in the balance sheet at about £90m.

Rowlinson doubled at £3.11m

Rowlinson Securities yesterday unveiled pre-tax profits doubled to £3.11m in the 12 months to the end of March 1989.

The Cheshire-based property and construction group achieved the increase on turnover of £13.37m, against £6.21m in the previous year.

After tax of £991,000 (£527,000), earnings per 10p share expanded to 16.94p (8.23p) and the proposed final dividend is lifted to 1.11p for a total for the year up from 0.9p to 1.35p.

Marston pumps profits up by 15% to near £15m

MARSTON, Thompson and Evershed, the Burton-on-Trent brewer of traditional bitter, reported a 15.3 per cent rise in pre-tax profits to £14.9m in the year to March 25, writes Lisa Wood. Turnover rose 8.1 per cent to £79.5m.

Earnings per share rose by 15.9 per cent to 11.29p. A final dividend of 2.42p will raise the total payment from to 2.9p to 3.36p.

Mr Michael Hurdle, chairman, said there had been a marked improvement in the second half to bring sales level with those in 1987-88.

Substantial progress had been made in two key areas: the deal with Whitbread for national distribution of Pedigree ale, Marston's best known cask-conditioned bitter, and development of a new catering concept, Tavern Table.

As part of the Whitbread deal, Marston agreed to accelerate the introduction of Heineken and Stella Artois lagers into its pubs. It has stopped production of its own Marcher lager.

Marston said it had become increasingly difficult and expensive to compete with heavily supported national lager brands.

Analysts are forecasting about £16.7m for 1989-90, which has 53 trading weeks, for a prospective p/e of 16.4.

DIVIDENDS ANNOUNCED

	Current payment	Date of payment	Corres - ponding dividend	Total for year	Total last year
Allied Colloids ......fin	2	Aug 26	1.65	2.65	2.3
Anglia Homes ......int	1.25	July 28	1.25	-	3.5
Archimedes Inv ......int	6.25	-	5.8	-	14.55
Argyll Group ......fin	4.1	Aug 29	3.5	6.2	5.3
Atkins (Hosiery)......fin	7.7	July 28	7	11	10
Body Shop Intl ......fin	1.125	–	0.9*	3.375‡	1.5
Brooke Tool Eng ......int	0.725	July 27	0.7	-	1.8
Caradon ......fin	7.5	Aug 11	5.5	11†	8
Channel Express§ ....fin	1.3	Aug 14	-	1.3	-
Cranbrook Elec § ......int	0.5	July 14	0.5	-	1.25
Cupid ♦ ......fin	2.2	-	-	2.2	-
De la Rue ......fin	10	July 28	10	13.25	13.25
Gt Portland Ests ......fin	6	July 21	5.35	9	8.1
Marshalls ......fin	6.5	-	5.25	8.75	7.25
Marston Thompson ..fin	2.42	-	2.06	3.36	2.9
Monks & Crane § ....fin	2.53	Aug 2	2	3.83	3.2
Norcros ......fin	11	Aug 14	10.4	16	14.4
Powell Duffryn ......fin	14.5	Aug 7	13.25	20.5	18.5
Ralston Trust ......int	1	-	-	-	-
Rowlinson Secs ......fin	1.11	-	0.68	1.35	0.9
Unilock ......fin	1.6	-	1.2	2.6	2.2
York Trust § ......fin	1.7	July 27	1.55	2.7	2

Dividends shown pence per share net except where otherwise stated. *Equivalent after allowing for scrip issue. †On capital increased by rights and/or acquisition issues. §USM stock. §§Unquoted stock. ♦Third market. ‡For 17 months.

BOARD MEETINGS

The following companies have notified dates of board meetings to the Stock Exchange. Such meetings are usually held for the purpose of considering dividends. Official indications are not available as to whether the dividends are interims or finals and the subdivisions shown below are based mainly on last year's timetables.

TODAY

Interims- Camford Engineering, Greenwich Resources, Neotronics, RCO.

Finals- Betterware Consumer Products, Brown (N), FKI Babcock, Hazlewood Foods, Lyons Irish, Orillame, Rothschild (J), Saunders & Sidney.

FUTURE DATES

Interims-	
Colorvision	June 15
Daily Mail & General Tst	June 8
Hewtin	June 16
Lookers	June 14
Finals-	
BET	June 19
Berkeley	June 28
Braithwaite	June 12
Bucknall Austin	July 5
Chloride	June 15
Dowty	June 29
ERF	June 22
Ferguson Industrial	June 12
Grand Central Inv	June 9
Hewetson	June 19
London International	June 15
Marling Industries	June 23
Renold	June 19
Waddington (John)	June 14

UK COMPANY NEWS

BUILDING PRODUCTS COMPANIES REPORT CONTRASTING FORTUNES

Slimmer Norcros edges ahead to £67m

By Clay Harris

A RADICAL programme of disposals enabled Norcros, the building products, print and packaging and property development group, to nudge pre-tax profits ahead by 2 per cent to £66.89m in the year to March 31.

The improvement from £65.27m reflected a decline in interest payments to £2.97m (£6.18m) as Norcros raised a net £84.3m from disposals of businesses which had accounted for more than half of 1987-88 turnover.

By the year-end, gearing had fallen from 30 per cent to 3 per cent.

Despite a lower tax charge, growth in earnings per share lagged behind the rise in profits, advancing only 1.5 per cent to 33.5p (33p).

Nevertheless, a proposed final dividend of 11p will raise the total by 11 per cent to 16p (14.4p).

With operating profits falling to £69.86m (£71.45m) on reduced turnover of £644.71m (£718.12m), the margin at this level improved from 9.9 per cent to 10.8 per cent. Norcros said profits from continuing businesses reached £64m on turnover of £414.2m, a margin of 15.4 per cent.

Tony Andrews

Michael Doherty: new chief executive of Norcros.

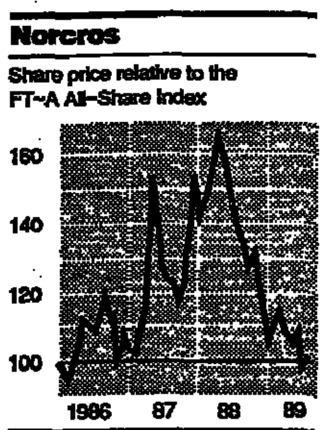
During the year, Norcros sold motor dealerships, Dow-Mac Concrete, Butterley Engineering, Bulk Carriers and Multitape. It swapped UBM builders' merchants for Meyer International's Crosby manufacturing business and £55m cash. The disposals led to an extraordinary credit of £8.59m (£5.3m debit).

Building products, including a four-month contribution from Crosby, accounted for operating profits of £17.56m (£10.67m); ceramics for £21.83m (£19.37m), print and packaging for £15.21m (£15.63m) and property for £13.85m (£8.84m).

Crittall Warmlife, the conservatory and double glazing subsidiary, fell into loss because of re-organisation costs and a weak market in the final months of the year.

Currency fluctuations reduced translated profits from print and packaging by £1.5m. The division also suffered from its main US rival's aggressive pricing.

Ceramics, on the other hand, benefited from an accounting change which increased the reported contribution from H&R Johnson India by about £1m.



● COMMENT

A slimmer Norcros looks well equipped to cope with the fraught days ahead. The disposals have not only eliminated businesses which were sliding rapidly towards break-even but also allowed Mr Michael Doherty, the new chief executive, to display a management coherence which has not been seen at Norcros for some time. The shares closed 2p higher at 312p. Problems remain, of course. Not least is how to make up for the £5.9m in sale-and-leaseback profit which is unlikely to be matched this year. Moreover, the challenge of high interest rates cannot be underestimated, even if commercial demand has not yet been affected. Pre-tax forecasts range from £69m to a shade over £72m. At the top end, the prospective p/e is less than 9 and the prospective yield, assuming dividend growth in line with earnings, is 7.5 per cent. An additional attraction for small investors is a new discount scheme which provides a 10 per cent rebate on the retail price of most Norcros products. For the moment at least, there is no minimum shareholding.

Organic growth helps boost Caradon 63% to £34m

By Vanessa Houlder

CARADON, the Surrey-based building products company, yesterday announced a 63 per cent rise from £20.7m to £33.8m in pre-tax profits for the year to April 2.

Turnover increased 71 per cent from £170.4m to £290.6. Excluding acquisitions, there was organic growth of 33 per cent in operating profits, achieved by increased volumes and margin improvements in all the divisions.

Everest, bought a year ago for £31.9m, contributed £5m in operating profits for the 10 month period. Mr Peter Jansen, chief executive, said that high interest rates had led to a difficult market, with a severe fall in sales since the start of the year.

Since the purchase, three of Everest's eight factories had been closed and the number of full time employees had been cut from 1,500 to 1,050. This gave rise to a £8.9m provision for liabilities and charges. Caradon also strengthened Everest's management, improved its product range and its marketing effort, said Mr Jansen.

Operating profits of £34.1m (£21.9m) comprised Caradon Plastic Building Products £10.2m (£7.7m); Caradon Mira £8.2m (£6.1m); Caradon Twyfords £7m (£5m); Caradon Plastics 3.7m (£3.1m) and Caradon Everest £5m.

Earnings per 5p share increased by 39 per cent to 37p (26.6p). A recommended final dividend of 7.5p makes a total of 11p (8p), an increase of 38 per cent.

● COMMENT

Caradon's popularity, undimmed during the boom years following its flotation in mid-1987, has given way in some quarters to a degree of scepticism. To some eyes, the recent downturn in sales and the large reorganisation costs make the Everest deal look rather less well-priced and well-timed than it did a year ago. Caradon's many supporters, however, can point to the expected benefits of its bold and rapid action to cut costs, improve products and boost the marketing effort of Everest. Elsewhere in its business, having spotted the market trend before many of the pundits, it has invested in efficiency savings which should keep profits growth coming through despite a downturn in the market. Moreover, the bulk of its products go into the repair and maintenance market which should be relatively insulated from the effects of higher interest rates. Overall, it is expected to make pre-tax profits of about £40m, which put the shares, down 1p to 340p yesterday, on a fairly valued p/e of 8.

BPB moves to bolster position in France

By David Waller

BPB INDUSTRIES, Europe's largest plasterboard manufacturer, has moved to bolster its position as market leader in France with the acquisition of Henry et Cie, a loss-making French manufacturer of polystyrene insulation products, for FF250m (£23.6m).

The cash purchase — which still requires the approval of the French Treasury — will give BPB an additional six production sites in France and take its share of the French thermal laminate market from 30-40 per cent to approximately 50 per cent.

This market has recently been suffering from overcapacity and the price war which resulted constrained BPB's profits growth over the last financial year; Henry suffered from the same problems and as a result made a loss last year.

During the current year, Henry's turnover is expected to be in the region of FF370m. Mr Brian Hogben, BPB's finance director, said that a vigorous rationalisation programme would be pursued to bring the company back into profit.

Combining Henry's operations with those of Placoplatre, BPB's existing subsidiary in this field, would create a grouping better able to cope with the problems of the industry, Mr Hogben argued.

The City was disappointed in December when BPB announced a 14 per cent increase in 1987-88 pre-tax profits to £104.1m, mainly because of overcapacity in continental Europe. Yesterday, its shares added 1½p to 237½p.

● In a separate development, Marling Industries has taken a 25 per cent stake in Mecaroute, a company based near Paris which distributes a number of Marling products, namely geo-textiles and building materials. The investment totals FFR 5.59m (£531,000), and the French company is budgeted to have sales of FFr 120m in 1989.

Armitage boosts Marshalls

By Philip Coggan

MARSHALLS, formerly Marshalls (Halifax), the concrete products and brick company, yesterday revealed a 91 per cent increase in pre-tax profits to £25.08m in the year to March 31 thanks partly to the acquisition of the George Armitage brickmaking group.

Fully-diluted earnings per share were 33 per cent higher at 27.07p (20.37p). The proposed final dividend is 5.5p (5.25p) making a total of 8.75p compared with 7.25p. A one-for-one scrip issue is also planned.

Operating profits were £25.98m (£13.93m) on turnover of £152.3m (£105.2m). After interest payments of £953,000 (£810,000), pre-tax profits were £25.08m (£13.12m).

Armitage Brick contributed £6.8m in the nine months it was owned by the group. Mr David Marshall, chairman, said that Armitage had not, as yet, been affected by the downturn in the housing market as about half its output was engineering bricks.

Mr Marshall said that Marshalls Mono, the concrete and quarrying subsidiary improved its margins and increased profits by 38 per cent to £17.1m. The business increased its share of the concrete flag and kerb market and maintained its 40 per cent share of the fast-growing concrete block paving market.

The engineering companies increased profits by 36 per cent with the Halifax Tool company, which sells drilling machines and equipment to quarrying companies, performing particularly well.

● COMMENT

Marshalls' profits record since 1982, when it made just £2.86m, is unimpeachable and these figures were once again at the top end of expectations, pushing the shares up 6p to 274p. As yet, the company has proved immune from the travails of the housing sector and with its strong position in concrete block paving and its northern bias, it may remain so. However other companies are expanding their capacity in concrete blocks and Marshalls' margins may yet come under pressure. A slowdown in the rate of growth looks inevitable but the company should still make £30m pre-tax this year. That puts the shares on a prospective p/e of 9 which looks fully valued for the short term.

Hazlewood purchase

Hazlewood Foods, the food manufacturing group, has acquired the assets and business of Heidrich Confiserie, a West German chocolate manufacturer, for DM14.4m (£4.6m) in cash. The company is not revealing Heidrich's profits or sales. The purchase was made via Hazlewood's West German subsidiary Weseke Holdings.

Body Shop higher at £15.24m

By Philip Coggan

BODY SHOP International, the cosmetics retailer, yesterday reported pre-tax profits of £15.24m in the 17 months to February 28, following a change in year end.

For comparison purposes, Body Shop also produced unaudited figures for the 12 months to February 28. Pre-tax profits in that period were £11.23m, compared with £7.2m in the previous 12 months to February 29 1988.

The company said that "despite the general nervousness about levels of retail trading on the high street as a result of current monetary policies, we continue to trade strongly and expect trading results to February 1990 to reflect our momentum".

Turnover for the 17 months was £73.01m and for the unaudited 12-month period £55.4m. Earnings per share over the same periods were 20.4p and 14.8p respectively. The company proposes a final dividend of 1.125p (0.9p) making a total of 3.375p (1.5p adjusted) and plans a one-for-one scrip issue.

Over the 17-month period, Body Shop opened 22 outlets in the UK and 69 overseas, bringing the totals to 111 and 255. Mr Gordon Roddick, chairman, said that the group expected to open a further 25-30 shops in the UK and 80 overseas this year.

In the US, three shops had been opened by the end of February and five more by the end of May. A further seven shops are likely to be opened this financial year. Body Shop expects the US operation to be profitable in the year to February 1991.

● COMMENT

Every year, the cynics wait for Body Shop to trip over its ideologically pure feet and every year, they are disappointed. The public seems quite capable of eating its beefburger with one hand and rubbing its skin with non-animal tested lotion with the other. Although imitators will inevitably arise, Body Shop may benefit from being clearly identified as the leader of the environmental pack. And, a lesser-known but equally important fact, it is extremely well managed. Investment in staff training and product development continues at a healthy rate and it has yet to be tripped up in its overseas expansion. If pre-tax profits reach £17.5m this year, the shares at 596p are on a prospective p/e of 25. That looks daunting but next year, the US company will move into profit and start to benefit from its tax losses. The cynics may have to wait a bit longer for the shares to go the way of Next and Storehouse.

Plastiseal heads for the USM

By Vanessa Houlder

Plastiseal, Coventry-based maker and installer of windows and doors, is joining the Unlisted Securities Market in a placing which values it at £7.07m. Dealings are expected to start on June 12.

Smith Keen Cutler is placing 2.2m shares at 90p each, which will raise £353,000. The company is considering establishing a manufacturing site in Scotland and entering the market for architectural aluminium products in the north of England.

Plastiseal makes windows and doors, principally from uPVC, for Property Services Agency clients, local authorities, contractors and trade customers. Around 95 per cent of its business is concerned with the repair and maintenance market.

Pre-tax profits for the year ended January 31 were £1.01m (£276,000) on turnover of £9.84m (£4.98m).

Bibby's chief executive decides to quit

By Clare Pearson

Mr Peter Wood is giving up the job of chief executive at J. Bibby & Sons, the agricultural and industrial conglomerate which is 86.5 per cent owned by Barlow Rand of South Africa.

All divisional managing directors will from now on report directly to Mr Richard Mansell-Jones, who took over as executive chairman in January last year. Bibby said the departure of Mr Wood, 56, who has been with the company for some 30 years, was by mutual agreement.

Bibby last month reported disappointing pre-tax profits for the six months to April 1 of £15.9m (£15m). It warned a slow-down in the US and UK economies would affect its science products and materials handling divisions, which offset a poor performance by paper interests in the first half.

Brooke Tool lifts profits to £0.82m

Brooke Tool Engineering (Holdings), the industrial cutting tools manufacturer, lifted pre-tax profits from £755,000 to £820,000 in the six months to end-March 1989.

Mr Fane Vernon, chairman, said: "Order books are appreciably higher than at the financial year end and reflect the general buoyancy both in the home and export markets." The group was committed to continued growth through the development of new products and markets coupled with strategic acquisitions, he added.

Turnover was £10.69m (£9.63m). Earnings rose to 1.7p (1.6p) and the interim dividend is 0.725p (0.7p).

Cupid tops forecast with £0.44m

Cupid, manufacturer of bridal wear and nursery products, made a pre-tax profit of £440,500 in the year ended March 31 compared with not less than £400,000 forecast and with £301,000 previously.

The year saw a rise in turnover to £4.35m (£2.59m) and an improvement in earnings to 13.9p (11.8p). The dividend is 2.2p, against 2p indicated last September when the company joined the Third Market.

In February the company acquired Jean Elizabeth and Bride Be Lovely for an initial £500,000, and opened its first Continental distribution branch, in Paris. Directors said the company's relatively strong position provided a base for organic and acquisition growth.

UK COMPANY NEWS

Fuel side checks Powell Duffryn

By Clare Pearson

PRE-TAX profits of Powell Duffryn, the industrial group, edged ahead from £33m to £33.93m in the year to end-March as the second mild winter in a row hit its dominant fuel distribution activities.

Trading profits from fuel distribution, which went into the winter months with margins already impared by price-cutting initiated during the previous year, fell by about 36 per cent from £13.95m to £8.85m on turnover of £349.3m (£367.1m).

Release of some deferred tax, after a review of capital investment plans, nevertheless meant earnings per share moved ahead to 38.6p (34.6p). The final dividend is lifted to 14.5p (13.25p) making 20.5p (18.5p) for the year.

There were exceptional credits totalling £710,000 (£409,000), comprising profits on sale of trade investments. In addition, property disposals, chiefly in the fuel distribution area, put in £1.81m (£3.47m) to trading profits of £38.82m (£37.85m).

Mr David Hubbard, chairman, said there was no question of Powell Duffryn pulling out of fuel distribution in the UK, where it was, on the contrary, investing to enhance market share. The company has, however, recently sold its 50 per cent owned French distribution arm to its partner, Elf France.

Shipping put in a strong performance, providing £6.46m (£3.9m) to the trading profit line. This was as all the fleet began to benefit from the firmer freight rates of the last two years, and as cost reductions due to a reflagging in the Isle of Man last September worked through.

The international bulk liquid storage operations continued the trend of recent years, with the Australia and South African businesses doing well but held back by the US and UK. This put in £4.97m (£4.48m).

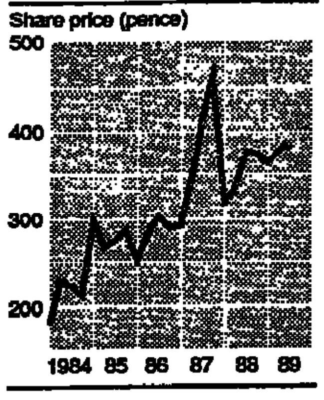
Construction materials businesses benefited from strong demand for concrete bricks, where capacity has also been *increased. This division provided* £4.1m (£3.29m). Engineering rose to £13.76m (£11.82m). The dominant UK operations pushed ahead although one US company, earmarked for sale, made losses.

● COMMENT

Powell Duffryn has a public image problem in that none of its activities inspire excitement, and fuel distribution looks more than ever dull given the current obsession with global warming. At the same time, economic slowdown in the US and UK can only mean lower growth rates in construction materials and engineering, though it is noteworthy that its exposure to the housing market in the former division is pretty low, and in the latter it is pursuing the niche strategy of concentrating on specialised vehicles for road and rail. Assuming a rather colder winter, and another good performance from shipping, followers are looking for pre-tax profits of around £38m in the current year, but much slower earnings per share growth. This puts the shares on a prospective p/e of just over 9. However, their saving grace is as always the handsome yield, which nears 8 per cent on a prospective basis.

Powell Duffryn

Share price (pence)



Atkins Bros falls to intense competition

By Alice Rawsthorn

ATKINS Brothers (Hosiery), the textile and electronics company in which Mr Russell Goward, the Australian investor, has a stake, saw its pre-tax profits fall from £1.62m to £1.27m last year because of intense competition in both areas of activity.

Mr Bill Dawson, chairman, said the level of competition was still intense in both areas, especially in textiles. The chairman hoped to maintain profits from textiles this year, *although he expected the electronics division to return to profits growth.*

In the year to March 31 1989, Atkins' sales fell slightly to £19.77m (£19.96m). The pressure on profitability caused a reduction in operating profits to £1.49m (£1.73m).

Earnings per share fell to 21.15p (28.36p). The final dividend is 7.7p thereby raising the total to 11p (10p). The share price was stable at 238p yesterday.

Atkins, which is based at Hinckley in Leicestershire, is involved in the production of leisurewear, hosiery and underwear. *In the last year* these sectors have been hit by the parallel problems of increasing imports and retail destocking.

As a result, Atkins has suffered intense pressure on margins and its operating profits from textiles fell to £1.45m (£1.63m) on sales of £15.09m (£15.04m). Mr Dawson said the pattern of retail demand had stabilised, but import pressure was still intense. Atkins has reorganised by reducing its involvement in knitted fabric production.

The company diversified into electronics four years ago by *buying a group of small businesses.* They fell into a loss because of management problems. Atkins had hoped to sell Textlite, one of the businesses, but decided to close it having failed to agree a deal.

Cartner Engineering, the remaining electronics company, managed to increase sales last year, despite delays in some large contracts. The electronics division produced operating profits of £145,000 (£211,000) on sales of £4.67m (£4.92m).

Mr Goward is thought to intend to sell his 9 per cent stake in Atkins. Mr Dawson *said the board hoped to ensure* that the holding would be bought by a group of institutional investors.

Enlarged York Trust turns in extra 55%

By John Thornhill

A SERIES of acquisitions helped York Trust Group, the USM-quoted financial services and investment concern, lift pre-tax profits by 55 per cent, from £5.51m to £8.55m, in the year to March 31.

Group income rose by 60 per cent to £29.49m (£18.4m). A final dividend of 1.7p will make a total of 2.7p, a 35 per cent advance over last year's 2p.

Diluted earnings per share, however, fell to 6.8p (8.1p) because of high extraordinary losses of £1.84m associated with the closure of two businesses: the loss-making personal finance arm of Richards Longstaff and the group's inter-dealing broking companies in Australia.

During the year the group reshaped its activities and evolved into a more broadly-based financial services organisation by making five acquisitions.

Those purchases included the US Kennedy companies and Babcock & Brown, the international leasing and money and financial futures broker.

Mr Neil Balfour, chairman and former Euro MP, said this transformation in the company's activities would bring a better quality of earnings in the future.

The profits, broken down by activity, were: investment activities £3m (£3.52m); corporate finance £2.62m (£64,000); financial services £1.52m (£30,000 loss); financial broking £2.48m (£2.38m); asset finance £1.04m (£631,000).

Mr Balfour said all the group's activities were currently performing well and, in particular, he highlighted the rapidly-expanding lease financing activities of Babcock & Brown.

● COMMENT

The quick-shifting nature of York's businesses provides some difficulties in trying to evaluate its performance. Originally the group was classified as an investment bank, but as Mr Balfour rather miffily comments, the Bank of England no longer allows York to call itself that. York has since broadened its interests and has strenghtened its position in pension fund management, financial broking, pensions consultancy and offshore services. Some of these additions, in particular Babcock & Brown, look promising and will help to enhance profits sustantially in the current year. A conservative estimate of £13m in pre-tax profits would put York on a prospective multiple of 10, after the increased number of shares in issue because of deferred considerations squeezes earnings growth. Many are still wary of financial services groups such as York after recent bad experiences, but on that rating it could still turn out to be an interesting investment. And with a good yield and liquid investments, it would seem to have little downside unless markets turn very nasty.

Allied Colloids rise marginal as exchange rates take toll

By Vanessa Houlder

EXCHANGE rate movements severely affected the results of Allied Colloids, speciality chemicals manufacturer, which yesterday announced a 2.2 per cent rise in pre-tax profits for the year ended April 1.

Pre-tax profits rose from £35.42m to £36.2m on turnover which increased by 11.8 per cent from £162.96m to £182.25m.

The company estimated that the strength of sterling lopped off £5.7m from profits. Overseas sales account for 80 per cent of turnover, with the Americas and Continental Europe each accounting for about one-third.

Mr John Binnie, sales director, said the company was fairly bullish about prospects given the recent fall in the dollar, although the effect would be muted as a result of a hedging exercise, which has established an effective exchange rate this year of $1.64.

The result reflected a recovery after a small profits decline in the first half, when the traditional weakness was exacerbated by delayed orders.

Raw material prices increased over the year, although the price rise slowed down in the second half.

The largest division by sales is the pollution business. Its other divisions comprise paper, mineral processing, general industries, agriculture, and oil services.

Capital expenditure on plant improvement and buildings was over £20m, of which 60 per cent was spent in the UK.

Earnings per share inched ahead from 8.9p to 8.92p. A final dividend of 2p (1.65p) is recommended, making a total for the year of 2.65p against 2.3p previously.

● COMMENT

Few chemicals companies are more at the mercy of currency fluctations than Allied Colloids, which exports 70 per cent which of its products. But last year's loss may be this year's gain; and the strong profits growth, masked last year by the strength of sterling, should now come through helped by the the fall in sterling and its hedging operations. The prospect of relative stability in raw material prices also suggests an optimistic view of this year. Looking further ahead, the prognosis also looks encouraging. Allied Colloids is one of the purest of speciality chemical companies, which will give it some protection against price competition and

furthermore, its involvement in pollution control exposes it to a valuable growth market. For this year, analysts estimate pre-tax profits of £43.5m, which on a share price of 149.5p, up 3.5p, leads to a fully valued p/e of 13.5.

Floyd in third engineering buy

By Ray Bashford

FLOYD ENERGY, has acquired a third engineering company as the group moves to diversify away from its base in oil and related process industries.

It is paying a maximum £12.8m for Romein Roosendaal Beheer, a Dutch-based designer, engineer and fabricator of steel structures.

Floyd is also negotiating the disposal of two onshore oil exploration and production areas in Spain. A firm cash offer had been received and a decision was expected within three to six weeks.

The initial £8.5m consideration for the Dutch group, which operates in the Benelux countries, is being financed through a mixture of medium-term finance, a placing of shares and an issue of shares to the vendor.

Institutional investors are taking up 19.5m Floyd shares at 20p each, raising £3.8m after expenses, while £5m will come from the arrangement financing and £200,000 through the share issue.

Romein had £2.6m of net assets and £2m in cash at December 31 last year and reported pre-tax profits of £2.4m for 1988.

This is the largest of the three purchases Floyd has made in the engineering sector during the past eight months. Last month Whiteley Reed, which specialises in pressure vessels, was acquired and Mech-Tool, a Darlington-based group operating in oil rig engineering work was bought in November.

Cranbrook Electronic ahead 50%

In the six months ended March 31 1989 Cranbrook Electronic Holdings lifted its pre-tax profit by 50 per cent, from £75,000 to £113,000.

Mr Tony Diamond, chairman, said despite signs of reduced activity in the market, he believed the company was in a strong position to grow and continue to meet market demands.

Cranbrook is a USM-quoted distributor of high technology electronic components and subsystems.

Turnover in the six months expanded 40 per cent to £5.93m (£4.23m), and from maintained earnings of 0.8p the interim dividend is held at 0.5p. Increased operating expenses reflected the acquisition of MCP Electronics last November, though effectively those expenses now represented only 28 per cent of sales, compared with 31.4 per cent in the same period of 1988.

MCP made a useful contribution. Progress at Pronto Electronic Systems was slowed by supply and technical problems with one of its major franchises. Efforts were in hand to make good the shortfall.

Acquisition for Meat Trade

By Nikki Tait

MEAT TRADE Suppliers, the sausage casings and butchers sundries supplier currently facing boardroom differences, yesterday announced the acquisition of G & H, a sausage casing and meat trade suppliers wholesale business in Deptford, south London.

The cash consideration will be based on completion accounts which are being prepared, but is expected to be about £25,000. In the year to end-May 1988, G & H reported pre-tax losses of £79,000. Net assets were £64,000.

However, MTS yesterday indicated that the deal could provide some flexibility over where the company's operations were based. This, in turn, might allow it to free some of the space at freehold premises in St John Street, Smithfield.

The company's shares were suspended in March, and last week directors said that they were still considering a proposal concerning the company's future.

However, according to a circular sent to shareholders, "an impasse has been reached" between one board member, Mr William Anstis, and the other directors over this. The group's largest institutional shareholder, M&G, is now calling for Mr Anstis' removal at an EGM next week.

Channel Express ahead of forecast

By Edward Sussman

MR PHILIP Meeson, the chairman of Channel Express, ploughed back 90 per cent of his personal dividend into the UK's only specialist flower distribution company as the group declared a 56 increase in pre-tax profit to £1.13m in the year to March 31 – its maiden result.

Mr Meeson, who owns 75 per cent of Channel, said the company would retain about £100,000 of his 1.3p per share dividend, the first issued by the company since its November 1988 flotation on the USM. "I think it's important to assure my investors of my personal enthusiasm and confidence in the company," he said.

At the time of flotation Channel forecast profits of £1.05m. During the year the company doubled its fleet of Dart Herald airplanes to eight to service its growing overnight freight delivery business.

Turnover was up 64 per cent to £13.44m (£8.19m) – the overnight delivery business accounts for roughly 50 per cent of turnover. Earnings per share jumped to 7.4p (1.2p). Mr Meeson forecast that the biggest area for potential growth would come from the distribution of flowers imported from outside its base in the Channel Islands. The company was also negotiating to expand its freight distribution fleet with the addition of a US airplane.

The chairman said that costs for additional aircraft had been contained because Channel had bought used planes.

Unilock lifts margins and recovers to £2m

By Andrew Hill

PROFITS AT Unilock Holdings, which makes and instals screens and partitions for office interiors, recovered to £2.01m before tax in the year to March 31, compared with a disappointing £1.15m in the equivalent period.

Turnover was up from £22.3m to £24m and earnings per share from 4.39p to 5.74p, still down on the record 1986-87 figure of 6.48p.

Unilock said gross margins had risen from 22 per cent to 27 per cent, on the back of improvements in productivity and performance in the contracting business.

Costs had been reduced. The company had started paying productivity bonuses instead of overtime, and employing a higher proportion of sub-contractors for installation.

Unilock was winning larger contracts at better prices. Last year contracts had an average value of about £20,000, and it was hoped to increase that to at least £50,000.

Since 1987-88, when bought-in low-margin partitions held back profits, it had also rethought its product strategy, eliminating loss-making goods. Various one-off costs cut the impact of these improvements and in trading terms profits had more than doubled.

The profit was struck after £155,000 (credit £255,000) legal costs incurred defending its Mistral product range against a competitor alleged to have copied the partitions.

It was also reduced by £190,000 costs linked to the £2m expansion at Hastings and the start-up of a new division making access flooring for offices.

Mr Randal Warner, Unilock's chief executive, said the company was contemplating further expansion into complementary activities, and was looking at acquisitions in continental Europe.

A final dividend of 1.6p is recommended making a total of 2.6p (2.2p) for the year.

Reorganisation helps Monks & Crane to £2.5m

Monks & Crane, the USM-quoted distributor of engineers' tools and fixing products, saw turnover and pre-tax profits rise nearly 19 per cent and 25 per cent respectively in the year to March 31 1989.

Increased penetration by the group's own brand products and £358,000 received from sales of branches helped push profit up to £2.51m (£2.01m), while turnover reached £46.61m (£39.28m).

Earnings were 9.4p (7.4p). The recommended final dividend is 2.53p for a total of 3.83p (3.2p).

Mr Albert Spacie, chairman, said the reorganisation was completed and "we can look forward to continuing to improve the results of every branch and trading operations within the company".

Reorganisation followed the acquisitions of Structural Fastenings Group, H.E.L.D. Fixings, and Fixings Delivery.

FT Share Service

The following securities were added to the Share Information Service in last Saturday's edition:

Gartmore Value Invs. (Section: Investment Trusts). Green (John) & Son (Papers). Ibex Holdings (Industrials). Mid Kent Hldgs. (Industrials). Porth Group (Industrials). Servomex (Electricals).

Racal spending $19m to strengthen product range

By Terry Dodsworth, Industrial Editor

RACAL-REDAC, the loss-making computer-aided design subsidiary of the Racal electronics group, is spending $19m (£12.15m) on the acquisition HHB Systems, a US supplier of computer-aided engineering equipment.

The company said that the purchase was part of its policy of strengthening its product range in the face of strong competive pressures.

Racal-Redac had not been growing as fast as the market in the US and Europe, and needed to increase its appeal to potential customers.

Sales of computer-aided design, manufacturing and engineering products are increasing at between 30 per cent and 40 per cent a year in developed industrial markets. Racal-Redac is only achieving this rate of growth in Japan, and shareholders were told late last year that it was making a "significant loss."

HHB, currently owned by Daisy Systems of the US, has had a working relationship with Racal-Redac for several years. The UK company said that the acquisition will strengthen its dominant position in computer-aided design systems for printed circuit boards.

The combined turnover of the two businesses stood at around £19m in the 1988 calendar year.

TECHNOLOGY

A geostationary satellite which is able to transmit several finely focused beams is being experimentally developed in Japan. **Ian Rodger** explains how this may solve the problem of congested airwaves

Multi-beam solution to a band shortage

The expanding demand for telecommunications capacity is putting a strain on available over-the-air frequencies, especially in small, crowded countries like Japan.

The problem has been dramatised in recent weeks by a trade row between the US and Japan over the expansion of mobile radio telephones in the Tokyo area. The Japanese Ministry of Posts and Telecommunications (MPT) has been claiming that expansion is impossible because of the lack of available frequencies.

The Communications Research Laboratory of the MPT is sponsoring a number of development projects aimed at finding ways of solving this problem. One of the most ambitious involves building a geostationary satellite that will transmit several finely focused beams on different parts of the Japanese archipelago.

The main effect of this approach is that the same transmission frequencies can be used more than once in the territory being covered.

Consider, for example, a conventional satellite transmitting a single beam over the entire British Isles. *It transmits* at a given bandwidth and, as a result, the bandwidth cannot be used by anyone else anywhere else in the British Isles.

But if, for example, this satellite was replaced by another with three beams, each focused on different parts of the UK – perhaps one on Scotland, one on northern England and a third on the south – the same bandwidth could be used for both the Scottish and southern beams, thus effectively doubling the message carrying capacity of that bandwidth in the UK.

This is because the signals would be directed at areas sufficiently far apart from one another to mean that their different messages would not interfere with each other. On-board switching equipment would enable messages to be *sent directly to and from users* in different beam areas.

In this example, the net increase in total transmission capacity compared with a single beam system would *not* be clear-cut, because the second bandwidth would not be used as effectively as the first. However, if a much larger number of more finely focused beams were used in the same territory, then a small range of bandwidths could be reused repeatedly, and so the potential increase in capacity would be considerable.

Moreover, it seems that the simple fact of focusing the beams adds to their transmission capacity. *The Japanese* multibeam experimental satellite, known as ETS-VI, which is due to be launched in 1992, was designed to contain 13 beams, *each covering an area of only* 100 kilometres in diameter when they reach the earth, to cover the four main islands of the archipelago.

Nippon Telegraph and Telephone (NTT), which is developing the system for the MPT, expects that such a satellite, if fully operational, would achieve a hundredfold increase in capacity over a single beam system.

An additional benefit arising from the focused beams is that the signals are more powerful than those from conventional satellites when they reach the *earth*, and *so* they can be picked up with smaller antennae. A second transmission system on the ETS-VI satellite will be used for mobile communications, and users will require only a 30cm high vertical bar antenna.

The satellite will *carry* three transmission systems. One will be in the Ka band which could cover Japan in 13 beams (although the experimental satellite *will only contain four* beams in this band, thus covering only part of the country). Another transmission sustem will be in the S band for mobile *communications which* will cover the territory with five beams. The third will be in the C band with one countrywide beam in each of the 4 gigahertz and 6 gigahertz bandwidths for delivering the S band mobile communications signals to earth stations connected to the terrestrial telecom system.

Japan is not alone in exploring the multibeam approach to communications satellites. *According to NTT officials*, Italy's Italsat is planning to launch one next year, using six beams to cover Italy, and the US and Canada are working on *projects for launch in 1992.*

NTT has completed the construction of the ETS-VI and recently unveiled it at its Radio Communication Systems Laboratories near Tokyo. The satellite consists of receivers and transmitters for Ka, C and S band communications connected to each other through a switch and to two large signal reflectors through four transmitting and four receiving horns. *In a full production satellite* there would have to be 13 horns, but for this experiment, only part of the country will be covered by the Ka band system.

The main challenge facing the builders was to find ways of packing all the increased communications equipment into a satellite with the *size* and weight constraints imposed by the new Japanese H-2 rocket on which it is to be launched.

Weight is, as always in space equipment, the main constraint, and the ETS-VI has to *weigh less than two tonnes. In* addition, any changes in design from existing satellites must be made with fully proven technology, since the *most* important thing for a satellite, as Mr Shuichi Samejima, manager of research in NTT's communications satellite laboratory explains, is that it works without maintenance for at least 10 years.

Fortunately, the ETS-VI has been built following a period in which miniaturisation in electronics has made great progress. At the same time, the development of radiation-hardened large scale integration (LSI) semiconductors has made LSIs practical for space use.

NTT is taking a bit of a chance in installing monolithic microwave integrated circuits (MMICs), a technology it announced only six months ago, in the transponders and the satellite switch. These circuits are simpler than conventional hybrid microwave integrated circuits, and will help further to reduce the weight of the transponders.

The other great advance has been in materials. For example, now that techniques for preventing surface corrosion of magnesium alloy have been perfected, the satellite's transponders have been encased in this metal, which is 35 per cent lighter than aluminium.

The effect of these changes can be substantial. For example, the weight of the 30/20 gigahertz band transponders is about 2.5kg per channel, half that of the transponders in a previous experimental satellite, the CS-3, which was launched last autumn.

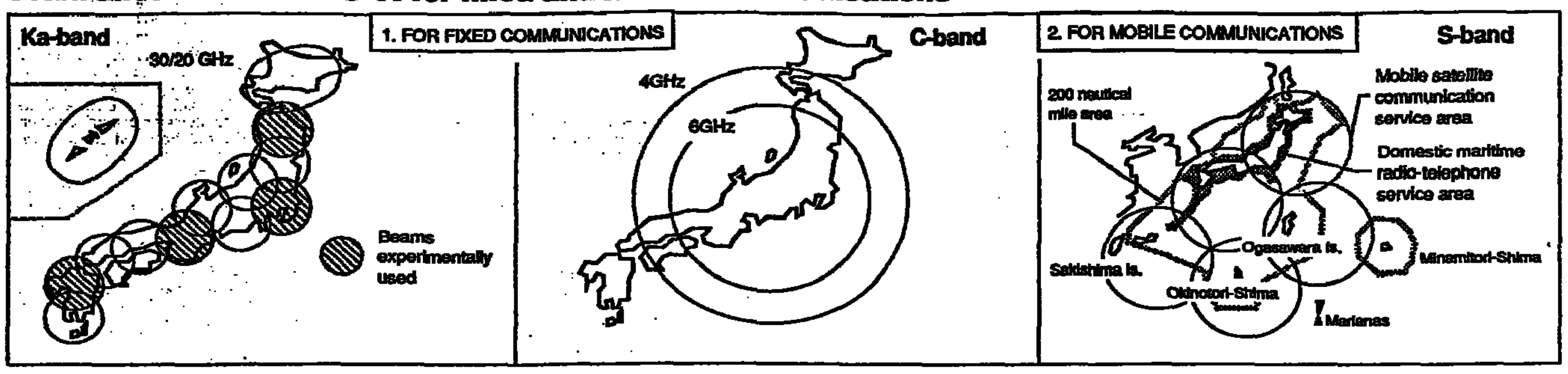
The antenna reflectors have to be very large to achieve the accuracy of pointing required. One is 3.5m in diameter, the other 2.5m. However, weight has been kept down by making them from carbon fibre reinforced plastic.

These savings make room for additional features, including a high capacity switching system and an antenna pointing control system. In ordinary satellites, the antenna is pointed by adjusting the attitude of the whole satellite. However, the ETS-VI needs greater precision so motors to adjust the attitude of the antennas have been installed.

The cost of the project has not been disclosed, but NTT officials say they hope to keep the cost per unit of weight within the pattern of existing communications satellites, despite the substantial increase in communications equipment on board. That would suggest a cost of $140m.

Assuming that all goes well with the development of the H-2 rocket, the satellite will be launched in 1992. However, it may be some time after that before it starts easing the available frequency shortage in the Tokyo area. NTT officials emphasise that the whole project is a government-led experiment with no plans for commercial application. "Maybe at some later time, it will be possible to use this satellite for commercial purposes," says one official.

Beam allocations of ETS-VI for fixed and mobile communications



Anybody who listens to the radio or television, travels by air or owns a mobile telephone is exploiting one of the world's most limited resources — the radio spectrum. And as the demand increases, the squeeze *becomes even tighter.*

In spite of the high public profile of radio-based consumer goods, such as car telephones and radiopagers, these services take *up a very small section of the radio* spectrum — in the UK, only about 4 per cent of available frequencies. The lion's share of usable frequencies is taken up by the *Ministry of Defence*, radio and television broadcasters and the Civil Aviation Authority, which uses the air waves for radar.

The biggest stumbling block for new radio services is that once the spectrum is allocated, it is very difficult for the government or planning authority to reclaim it. In the UK, for example, television companies continued to broadcast *on the old 405-line television* channels until 1985, although new 405-line television sets had not been sold for over a decade.

New services are also often *shelved because they are not* suitable for available frequencies — each group of channels in the radio spectrum having its own characteristics. (For example, the *way radio frequencies behave at* around 900 MHz make them suitable for use within buildings, such as for cordless telephones.)

As a rule, the lower the frequency, *the further the radio signal can* travel. This means that frequencies at the low end of the spectrum are more prone to interference from services in other countries — given appropriate weather conditions, it is possible to pick up US television broadcasts on low frequency UK radio channels.

The higher the frequency, the less chance there is of interference, *but at the same time the distance* which the signal can travel is shorter. This makes it more expensive to set up a radio service at high frequencies because the *transmitters and receivers have* to be placed closer together, pushing up the infrastructure costs.

Because the established users of radio waves have already got *their hands on the most easily* useable radio channels, operators *of new services are being pushed* higher and higher up the frequency bands, at greater and greater expense. To *get as much use out* of their allocated frequencies as possible, therefore, they try to squeeze as many customers into as small a number of radio channels as they can.

To do this they are employing several ways of increasing the number of calls that can be made on one frequency.

- **Cellular radio techniques.** These *are now being used for most new* mobile telephone services. They split the country into a number of "cells" with the telephone call in each cell being transmitted on a *different frequency to that of its* neighbours. This means each frequency can be used several times around the country, as the cells using the same frequency will be *far enough apart to avoid* interference. (The Japanese ETS-VI experimental satellite uses a similar system.)
- **Trunking.** Here a number of radio channels are grouped together for use by one service. When a call is made it is allocated to the first available channel — "dynamic allocation". If, for example, eight radio channels are allocated to a service, it can support three times the number of radios supported by a non-trunked service.
- **Compression.** This new technique squeezes the signals into *a smaller space. The new telepoint* mobile services which should come into service later this year in the UK will only use half the frequency per call of current traditional voice *services. Compression works by* extracting certain features common to all human voices for coding, and then compacting any extraneous material. It is only suitable for voice *communications* as data signals do not adhere to any recognisable patterns.
- **Use of data.** This cuts down spectrum use — since it takes 10 times the spectrum to transmit a piece of information by voice as it does by data. However, in the US, where data transmission has become widespread for taxis and delivery fleets, the amount of information being sent has tripled.

Della Bradshaw

COMMODITIES AND AGRICULTURE

Chinese crisis rocks grain futures

By Deborah Hargreaves in Chicago

THE POLITICAL turmoil in China has rocked Chicago's grain futures this week in a market already depressed by rainy weather in the Midwest. The grain markets at the Chicago Board of Trade remain extremely nervous as the effects of the uproar in China and its possible effects on the grain trade become apparent.

In spite of an unusually large purchase of wheat by China, which was announced on Monday, wheat futures drifted lower yesterday.

Traders believe the 1.85m-tonne wheat purchase represents old business that is still to be shipped and is now being registered in case the US Government imposes restrictions on grain trade with the country.

The rush by commercial exporters to register wheat sales to China recalls a similar move by the grain trade which followed the Soviet invasion of Afghanistan and preceded the US grain embargo on the Soviet Union

China's huge wheat purchase was made commercially – outside the US Export Enhancement Program even though the country still has a considerable amount of subsidised wheat under the programme it could draw on. Traders believe China will continue to turn to the commercial market since these sales cannot be cut off for foreign policy reasons as could the EEP sales.

China has bought 1.1m tonnes of wheat under the export programme so far this year and has 910,000 tonnes still available. The country's internal struggle could turn it to the world market for even more grain since troop movements will hold up the transport of home-grown grain to its large coastal population.

The US Department of Agriculture earlier estimated that China would buy 16m tonnes of world market wheat in the 1988-89 marketing year and another 16m tonnes in 1989-90.

China's production of maize is also likely to be affected by the political strife, and Chicago's markets were counting on lower Chinese sales of maize to the Soviet Union yesterday. China exports some 4m tonnes of maize a year with almost half of that going to the Soviets. There have already been reports of a disruption in containerised shipments to Hong Kong.

"There's something for everyone in these markets right now," commented Mr Bruce Nathanson at Linnco Futures in Chicago, "they're very sensitive to what's going on and could turn on a dime."

Trading was thin yesterday at the CBoT as many players watched developments from the sidelines. Grain futures in Chicago have already been depressed over the last couple of weeks by the return of normal spring weather to the Midwest which makes a repeat of last year's drought extremely unlikely.

Ironically, the one piece of news that has given a modest strength to the market is about unusually wet weather in parts of the Eastern cornbelt – Ohio and Indiana. Heavy rainfall in these states has delayed maize planting by several weeks. This has boosted futures prices for new crop maize – the December futures contract – by several cents. However, overall, grain futures have dropped to below their levels a year ago when drought fears pushed the market into orbit.

Although the harvest of winter wheat is expected to be low because of poor growing conditions in Kansas, the extent of the damage is not thought to be as great as was initially expected.

Reacting to a buoyant world market for wheat, the US Department of Agriculture has increased the amount of acreage available for planting wheat in the US next year. The Department has announced that only 5 per cent of available land will be set-aside under its acreage reduction programme. This marks a decline from 10 per cent this year and 27.5 per cent last year. The 5 per cent set-aside represents an increase of 1.7m acres planted with wheat or an estimated additional 50m bushels of grain.

Mr Regie Wyckoff, president of the National Wheat Growers' Association said: "World wheat demand appears strong for the foreseeable future, this modest increase in production will be snapped up by the market rather than going into farmers' grain bins."

Fijians strive to feed themselves

Geoff Tansey on increasing rice output and crop diversification

FIJI IS increasing its self-sufficiency in rice and diversifying cash cropping, which is still dominated by sugar. Three-quarters of the 70 per cent of total domestic export earnings accounted for by agriculture come from sugar.

Rice consumption grew in the 1980s, from about 38,500 tonnes in 1981, to an estimated 48,000 tonnes in 1988, with per capita consumption around 62 kg a year. Thanks to increasing domestic production, up from 17,000 tonnes in 1981 to an estimated 32,000 tonnes in 1988, imports have fallen from 21,500 tonnes to 16,500 tonnes, making the country about two-thirds self-sufficient. Still, officials want to replace more of the F$7m (£2.9m) spent on rice imports each year.

The prime target is 90 per cent self-sufficiency by 1990. Senior officials in the Ministry of Primary Industries admit that this may not be reached but expect about 75 per cent self-sufficiency in 1989.

Droughts and cyclones in the 1980s, plus the disruption resulting from two military coups in 1987, have hampered development. In rice, production increases are coming through expansion of the area grown, through drainage and irrigation to allow double cropping, new varieties and more intensive production methods.

Overseas aid plays an important part. The Food and Agriculture Organisation of the United Nations (FAO) provides a chief technical adviser to the drainage and irrigation division of the primary industries ministry. The Australians are funding development of irrigated rice in Vanua Levu with A$6.5m over four to five years, and the Japanese have an aid-in-kind project to develop a small area for irrigation and introduce new varieties in the Navua River area.

Small farmers here can now double-crop their six to 12 acres. They adjoin one of Fiji's biggest diversified agricultural enterprises, Consolidated Agriculture, which has given part of its 3,800 hectares for the dam to provide the gravity-fed irrigation system in return for canal and drainage works on its land by the ministry.

Despite the poor investment climate, owing to political uncertainty, Consolidated Agriculture is still commited to investing in agriculture. "As a whole, I think that the agriculture sector in Fiji deserves investment," says Mr Blackney, one of the partners. He sees the need for diversification and increasing returns in the rural sector.

Rice does increase returns, especially for the smallholders who form the bulk of the country's 13,300 rice farmers. They have a guaranteed market for paddy, at F$320 per tonne, although many mill it themselves and sell on the market direct where rice cost from 80 cents to F$1 a kilogram.

Both government and aid officials in Suva and Canberra defend themselves from the criticism made by some Australian academics that the investment in rice is uneconomic by pointing to the broader impact it has on the communities where production is increasing.

Diversification is under way too. Ginger production and processing is encouraged, with exports now reaching F$3m. Old coconut plantations are being rehabilitated, with part of the European Community's aid worth over 12m Ecu over five years, to expand its role as a food crop and for export of the processed production in confectionery, desiccated or creamed.

Fiji wants to encourage joint ventures for processing, for which substantial tax incentives are available.

The key word at the ministry is consolidation – to build on the infrastructural investments of the last ten years and minimise further capital investment. This means intensified use of agricultural land

Another aim is to develop niche markets, for example, with pawpaw to Japan, despite some problems with quality and pests. Fisheries are also expanding and exports, partly helped by Japanese aid in building a cannery.

Some feel the ministry does not pay enough attention to developing local food crops, like yam and cassava. These are grown more in the interior where the land is coming under population pressure with more cultivation of steep slopes.

The National Food and Nutrition Committee is concerned about the emergence of western disease patterns linked to western-style diets and would like to see more emphasis on developing local food crops. Senior officials recognise that they have not paid enough attention to the nutritional aspects of food production and say they are trying to integrate the committee's concerns into their programme.

VIETNAM IS expected to export about 800,000 tonnes of low-grade 25 and 35 per cent white rice this year, Thai traders said, reports Reuter from Bangkok.

The traders, who closely monitor rice trade in South East Asia, said Vietnamese rice exporters had been particularly active this year with shipments reaching about 400,000 tonnes during the January/May period. They did not provide comparable figures.

Most Vietnamese exports went to western and southern Africa, the traders added.

Oil demand up 2.2% in first quarter

By Max Wilkinson, Resources Editor

THE INDUSTRIAL world's oil consumption was 700,000 barrels per day or 2.2 per cent higher in the first three months of this year than in the same period of 1988, according to estimates published yesterday by the International Energy Agency.

The latest demand figures from the Paris-based agency's Monthly Oil Market Report help to explain why oil prices have remained fairly firm while the 13-member Organisation of Petroleum Exporting Countries maintained production well above its agreed quota level. For the year as a whole the agency expects demand to be about 2 per cent higher than in 1988.

The IEA also says that for technical reasons it has consistently under-estimated world oil consumption, mainly because of under-reporting of developing countries' consumption. The under-estimate of world oil demand rose from an average of 200,000 b/d in 1983 to 600,000 b/d last year.

The agency also believes it has under-estimated world oil supply, but by a lesser amount, averaging 100,000 b/d in 1984 and 300,000 last year.

Although the agency makes the point that its revisions do not alter what has been happening in the real world, its figures are likely to have some effect on the politics of the Opec talks which were continuing yesterday in Vienna without agreement.

The 13 members of the cartel appear now to accept that its production of ceiling of 18.5m b/d agreed in November could safely be raised to accommodate higher world demand. During informal talks over the weekend it appeared that Saudi Arabia was prepared to accept a 1m b/d increase in production to be shared by all members in proportion to existing quotas, with a 500,000 b/d "temporary" increase to be shared between Kuwait, the United Arab Emirates and three smaller-scale producers.

Kuwait and the UAE have been greatly exceeding their quotas. By legitimising higher levels of output the group would hope to induce stricter discipline in future.

According to the IEA, both the UAE and Kuwait produced 1.6m b/d in May, compared with quotas of close to 1m b/d in each case.

Yesterday, the group returned to informal talks amid signals that Kuwait was unwilling to accept a revised quota close to 1.3m b/d, while Saudi Arabia was refusing to agree to any special allocation unless Kuwait would reduce production to this figure.

Support grows for coffee plan

By David Blackwell

A COLOMBIAN proposal for a two-year extension to the International Coffee Agreement yesterday appeared to be gaining support at talks in London on the future of the pact.

Mr Jorio Dauster, head of the Brazilian delegation, said the reaction of other delegates to the proposal, which was hammered out by the majority of producers yesterday morning, was "very positive" and a "meaningful step forward."

The proposal envisages a two-year extension, with any redistribution of export quotas to be agreed at the ICO annual meeting in September.

Mr Jon Rosenbaum, head of the US delegation, said the US preferred the Colombian proposal to another made by the EC for a three-year extension, but said the US would only consider any extension for one year, and "then only if we know the allocation of quotas for that year."

One of the main US complaints about the current agreement is that the export quotas by which the ICO aims to stabilise prices do not allow enough top quality arabica coffee on to the member market.

The other mild countries mainly Central American arabica growers, said on Monday they would not accept an extension unless a redistribution of export quotas was agreed during this week's talks. At yesterday aternoon's council meeting they came under attack from African robusta producers who said the other milds were against the the Colombian proposal even though they were the main offenders in selling coffee cheaply to countries outside the agreement – which has angered all consumers.

The Colombian proposal aims to tackle this so-called two-tier market by agreeing quantitative restrictions on exports to non-members in September.

This morning the ICO council reconvenes to continue discussions on the proposal.

Weaker demand forecast for aluminium this year

By Kenneth Gooding, Mining Correspondent, in Brussels

DEMAND for primary aluminium in Western Europe is forecast to rise by no more than 1 per cent this year from last year's record 4.3m tonnes, according to the European Aluminium Association.

This indicates that the Association expects a considerable weakening in demand later this year because sales in the first quarter were 10 per cent ahead of the same months in 1988 at 885,000 tonnes.

The association predicts, however, that over the next five years demand for primary aluminium in Western Europe will grow at an annual average of 2 per cent. But all the extra demand will be provided by imported metal. Last year primary aluminium production in the region reached 3.5m tonnes, also a record but well below consumption.

There was some drawdown of stocks, but most of the difference between demand and supply was made up by imports, which reached an unprecented 450,000 tonnes.

As stocks are near the lowest level possible, the Association expects that another 40,000 tonnes will have to be imported this year.

Mr Theodor Tschopp, chairman of the association, pointed out that although primary aluminium output was moving to areas of the world with low cost hydro-electric power, western Europe needed to maintain a reasonable level of production capacity to feed its growing domestic market.

However, he expected the planned increases in capacity in the region - including Pechiney's 200,000 tonnes a year smelter at Dunkirk in France - to do no more than replace the closures.

The western European industry is also taking steps to speed up the development of the secondary aluminium (or scrap) industry. A record 1.6m tonnes of recycled metal was used in the region last year.

"We expect this trend to continue in the years ahead, not only because of the shortage of primary aluminium capacity, but also the increasing volume of scrap resulting from aluminium industrial goods ending their service life," said Mr Tschopp. The industry is aiming to build its share of western Europe's 16bn beverage can market from 38 per cent to 50 per cent by 1991.

Bougainville issues copper supply warning

By Chris Sherwell in Sydney

BOUGAINVILLE Copper, the Papua New Guinean copper and gold mine shut down for the past three weeks by sabotage and guerrilla violence, has told customers it faces a "force majeure situation," but says it has not yet lost any sales.

A company official confirmed that it had issued notices to its customers informing them it was unable to meet its obligations on two shipments of concentrate due to be despatched in May, and another this month. There was also concern about shipments due in July and August.

But he added that the company had not yet reached the stage where it could not deliver, and had therefore not claimed force majeure. "We're simply advising customers that the situation was now very serious," he said.

A 15-day truce on Bougainville island was meanwhile due to expire last night.

A Catholic Church leader, acting as mediator on behalf of the Port Moresby Government, has held talks with Mr Francis Ona, leader of a militant group of disaffected landowners demanding heavy compensation for the establishment and operation of the mine.

Details of the talks have not been made public, but it is clear that the Government must decide either to extend the truce in order to take the discussions further or to declare a state of emergency and escalate its military action.

An estimated 15 people have died over the past seven months as government troops have clashed with the rebel landowners who have attacked local civilians and launched sabotage and arson assaults on mine and other property.

The Government is a 20 per cent shareholder in Bougainville Copper, which is controlled by CRA, the Australian resources group.

WEEKLY METALS PRICES

All prices as supplied by Metal Bulletin (last week's prices in brackets).

ANTIMONY: European free market 99.6 per cent, $ per tonne, in warehouse, 1,830-1,870 (1,850-1,900).

BISMUTH: European free market, min. 99.99 per cent, $ per lb, tonne lots in warehouse, 5.65-5.95 (5.90-6.20).

CADMIUM: European free market, min. 99.5 per cent, $ per lb, in warehouse, 6.40-6.70 (6.50-6.80).

COBALT: European free market, 99.5 per cent, $ per lb, in warehouse, 7.45-7.65 (same).

MERCURY: European free market, min. 99.99 per cent, $ per 76 lb flask, in warehouse, 245-260 (250-260).

MOLYBDENUM: European free market, drummed molybdic oxide, $ per lb Mo, in warehouse, 3.68-3.75 (same).

SELENIUM: European free market, min 99.5 per cent, $ per lb, in warehouse, 6.50-7.30 (same).

TUNGSTEN ORE: European free market, standard min. 65 per cent, $ per tonne unit (10 kg) WO, cif, 51-64 (same).

VANADIUM: European free market, min. 98 per cent, $ a lb VO, cif, 6.60-7.00 (7.30-7.60).

URANIUM: Nuexco exchange value, $ per lb, UO, 9.85 (10.70).

WORLD COMMODITIES PRICES

LONDON MARKETS

DOLLAR strength helped the cocoa futures market to stage a sharpish rally yesterday, although the general market tone remained dull in the absence of fresh fundamental news. The September position ended the day £22 higher at £814 a tonne. Most London Metal Exhnage markets went into reverse, meanwhile, with rally's for base metals which had been falling and falls for those which had been rising. Dealers said cash high grade zinc's $22.50 rise to $1,500 a tonne, had resulted from shortcovering as dealers came to the conclusion that the market had become oversold in the recent $180-plus price slide. It was much the same for copper, where the cash position bounced off an £8-month low to end £19 up at £1,566 a tonne. But cash lead surrendered some of the advnace which had resulted from supply squeeze fears in recent days.

SPOT MARKETS

Crude oil (per barrel FOB)		+ or -
Dubai	$15.90-6.00v	+.075
Brent Blend	$18.35-8.45	+.025
W.T.I. (1 pm est)	$20.38-0.43v	+0.01
Oil products (NWE prompt delivery per tonne CIF)		+ or -
Premium Gasoline	$234-236	-1.5
Gas Oil	$147-148	-2
Heavy Fuel Oil	$91-94	-2
Naphtha	$186-188	-2
Petroleum Argus Estimates		
Other		+ or -
Gold (per troy oz)♣	$365.25	-1.00
Silver (per troy oz)♣	527c	-4
Platinum (per troy oz)	$500.00	-3.25
Palladium (per troy oz)	$153.20	+0.55
Aluminium (free market)	$1915	-70
Copper (US Producer)	113⅝-15⅞c	-3
Lead (US Producer)	37.25c	
Nickel (free market)	560c	-10
Tin (European free market)	$10242.5	-7.5
Tin (Kuala Lumpur market)	27.19r	+0.01
Tin (New York)	470.5c	+1.0
Zinc (US Prime Western)	83½c	
Cattle (live weight)†	120.90p	+2.06*
Sheep (dead weight)†	239.02p	+25.5*
Pigs (live weight)†	87.00p	+2.85*
London daily sugar (raw)	$290.4u	-4.2
London daily sugar (white)	$360u	-3
Tate and Lyle export price	£291	+1
Barley (English feed)	£104.5w	
Maize (US No. 3 yellow)	£131.5	
Wheat (US Dark Northern)	£129.25u	
Rubber (spot)♥	57.00p	-0.25
Rubber (Jul)♥	62.75p	-0.75
Rubber (Aug)♥	62.75p	-0.75
Rubber (KL RSS No 1 Jul)	290m	-2
Coconut oil (Philippines)§	$565x	-5
Palm Oil (Malaysian)§	$390.0	-2.5
Copra (Philippines)§	$357.5	
Soyabeans (US)	£196.0	+3.5
Cotton "A" index	76.8c	-1.3
Wooltops (64s Super)	820p	

£ a tonne unless otherwise stated. p-pence/kg. c-cents/lb. r-ringgit/kg. v-Jul. u-Jun/Jul. x-Jul/Aug. w-Aug. z-May/Jun. †Meat Commission average fatstock prices. * change from a week ago. ♥London physical market. §CIF Rotterdam. ♣ Bullion market close. m-Malaysian cents/kg.

COCOA £/tonne

	Close	Previous	High/Low
Jul	795	773	796 773
Sep	814	792	814 787
Dec	869	839	870 844
Mar	871	846	871 848
May	878	854	872 862
Jul	896	873	
Sep	909	889	910 891

Turnover:4871 (4620) lots of 10 tonnes
ICCO indicator prices (SDRs per tonne). Daily price for Jun 5 956.78 (965.49) :10 day average for Jun 6 981.44 (982.27)

COFFEE £/tonne

	Close	Previous	High/Low
Jly	1192	1183	1200 1175
Sep	1167	1163	1167 1150
Nov	1150	1148	1152 1135
Jan	1145	1143	1146 1134
Mar	1143	1144	1141 1133
May	1140	1143	1141 1140

Turnover:4362 (2359) lots of 5 tonnes
ICO indicator prices (US cents per pound) for Jun 5: Comp. daily 112.02 (114.40) . 15 day average 116.26 (116.50)

SUGAR ($ per tonne)

Raw	Close	Previous	High/Low
Aug	251.60	250.40	251.40 246.80
Oct	251.60	250.20	251.80 246.80
Dec	250.00	249.40	246.00
Mar	245.20	243.20	244.80 240.20
May	243.40	242.40	242.20 239.20
White	**Close**	**Previous**	**High/Low**
Aug	343.00	340.50	342.00 337.00
Oct	323.00	321.50	322.00 319.00
Dec	316.00	312.50	
Mar	304.00	301.50	301.50 300.00

Turnover: Raw 2832 (4013)lots of 50 tonnes. White 890 (575).
Paris- White (FFr per tonne): Aug 2295 Oct 2164, Dec 2115, Mar 2040, May 2025 Aug 2020.

CRUDE OIL $/barrel

	Close	Previous	High/Low
Jul	18.05	18.03	18.07 17.94
Aug	17.77	17.80	17.84 17.63
Sep	17.57	17.56	
IPE Index	17.98	17.64	

Turnover: 7799 (7382)

GAS OIL $/tonne

	Close	Previous	High/Low
Jun	147.75	148.75	148.75 147.25
Jul	147.50	148.00	148.00 147.00
Aug	148.50	148.75	149.50 147.75
Sep	149.75	149.75	150.25 149.25
Oct	151.50	151.00	151.50 151.00
Nov	152.50	152.50	152.75 152.00
Dec	153.75	153.50	153.75 153.00

Turnover 8499 (9003)lots of 100 tonnes

JUTE
C and f Dundee - BTC $510, BWC $540, BTD $455, BWD $465; c and f Antwerp - BTC $485, BWC $475, BWD $490, BTD $440.

COTTON
Liverpool- Spot and shipment sales for the week ended June 2 amounted to 236 tonnes against 880 tonnes in the previous week. Trading was very slow during the week with only small orders made in West African growths.

LONDON METAL EXCHANGE (Prices supplied by Amalgamated Metal Trading)

	Close	Previous	High/Low	AM Official	Kerb close	Open interest
Aluminium, 99.7% purity ($ per tonne)						Ring turnover 14,750 tonne
Cash	1985-75	2000-10		1940-5		
3 months	1915-20	1943-5	1930/1895	1901-2	1910-5	34,193 lots
Copper, Grade A (£ per tonne)						Ring turnover 28,550 tonne
Cash	1565-7	1546-8		1547-8		
3 months	1580-1	1567-8	1582/1569	1567-8	1574-5	75,374 lots
Lead (£ per tonne)						Ring turnover 8,900 tonne
Cash	435-40	445-50	440/438	438-40		
3 months	398-9	394-5	398/392	392-2.5	395-7	9,774 lots
Nickel ($ per tonne)						Ring turnover 2,670 tonne
Cash	12800-900	12800-50	12850/12500	12500-50		
3 months	12000-50	12325-50	12200/11950	11940-50	12000-25	7,655 lots
Tin ($ per tonne)						Ring turnover 505 tonne
July 3	10270-90	10250-80		10240-60		
3 months	10290-5	10270-5	10300/10210	10260-70	10280-5	690 lots
Zinc, Special High Grade ($ per tonne)						Ring turnover 6,925 tonne
Cash	1595-600	1575-85	1590/1580	1593-5		
3 months	1525-30	1515-20	1535/1520	1525-30	1520-30	11,665 lots
Zinc ($ per tonne)						Ring turnover 12,925 tonne
Cash	1495-505	1475-80	1477/1475	1475-7		
3 months	1455-60	1440-3	1465/1420	1435-40	1445-50	10,290 lots

POTATOES £/tonne

	Close	Previous	High/Low
Nov	98.5	99.0	99.0
Feb	112.0	115.0	
Apr	166.0	166.4	167.5 164.0
May	182.0	185.0	183.0 179.0

Turnover 429 (319) lots of 40 tonnes.

SOYABEAN MEAL £/tonne

	Close	Previous	High/Low
Jun	152.00	152.50	
Aug	148.50	148.70	
Oct	148.50	148.00	149.00

Turnover 10 (0)lots of 20 tonnes.

FREIGHT FUTURES $10/index point

	Close	Previous	High/Low
Jun	1375	1351	1380 1360
Jul	1334	1316	1350 1330
Oct	1461	1427	1470 1450
Jan	1485	1460	1490 1480
Apr	1510	1510	1510
BFI	1445	1450	

Turnover 226 (477)

GRAINS £/tonne

Wheat	Close	Previous	High/Low
Jun	115.25	115.55	115.25 115.20
Sep	104.40	104.60	
Nov	107.15	107.35	107.15 107.00
Jan	110.20	110.40	110.20 110.10
Mar	113.30	113.50	113.30
May	116.50	116.65	116.40
Barley	**Close**	**Previous**	**High/Low**
Sep	102.70	103.00	102.75 102.70
Nov	105.95	106.20	105.95
Jan	109.20	109.45	

Turnover: Wheat 81 (88), Barley 12 (35).
Turnover lots of 100 tonnes.

PIGS (Cash Settlement) p/kg

	Close	Previous	High/Low
Jun	111.3	111.0	
Aug	108.5	108.5	
Oct	113.0	113.0	
Nov	114.0	113.3	
Feb	109.0	107.5	

Turnover 17 (5) lots of 3,250 kg

LONDON BULLION MARKET

Gold (fine oz)	$ price	£ equivalent
Close	365-365½	232½-233
Opening	365-365½	233¼-234¼
Morning fix	365	233.048
Afternoon fix	364.9	232.91
Day's high	365¾-366¼	
Day's low	364¼-364¾	

Coins	$ price	£ equivalent
Mapleleaf	376-381	239½-242½
Britannia	376-381	239½-242½
US Eagle	376-381	239½-242½
Angel	374-379	238⅝-241¼
Krugerrand	364-367	232-234
New Sov.	86-87	54¾-55½
Old Sov.	86-87	54¾-55½
Noble Plat	502.25-510.25	321.05-326.15

Silver fix	p/fine oz	US cts equiv
Spot	334.85	523.90
3 months	346.75	536.35
6 months	359.05	548.85
12 months	382.40	572.75

LONDON METAL EXCHANGE TRADED OPTIONS

Aluminium (99.7%)	Calls		Puts	
Strike price $ tonne	Jul	Sep	Jul	Sep
1850	141	123	17	55
1950	74	73	50	102
2050	32	40	107	167
Copper (Grade A)	**Calls**		**Puts**	
2400	97	147	41	98
2500	47	100	90	149
2600	19	66	161	212

LONDON FOX TRADED OPTIONS

Coffee	Jul	Sep	Jul	Sep
1150	48	85	7	68
1200	18	62	27	95
1250	9	45	68	128
Cocoa	**Jul**	**Sep**	**Jul**	**Sep**
700	95	116	0	3
750	49	74	4	11
800	16	42	21	29

US MARKETS

THE GOLD, silver and platinum markets all rallied sharply in heavy volume, reports Drexel Burnham Lambert. Trade, commission house and local players were all active. Gold gained over 12 dollars as the busiest metal. Technical short covering and weakness in the dollar were noted. In the softs, cocoa prices were higher from arbitrage and speculative buying. Sugar trading featured price consolidation as the market closed nearly unchanged. Trade support helped advance the coffee futures. Cotton futures were again lower as commission selling and lack of new buying kept the market weak. The livestocks were all lower led by belly futures that lost 185 basis July. Weak cash prices and a premium of futures to cash weighed on the market. Cattle futures were lower with light packer interest noted. Spillover selling depressed the hog futures. The energy complex was quiet as prices drifted lower. In the grains, soybeans advanced with July-November spread activity featured. Commercial groups were sellers in the wheat market.

New York

GOLD 100 troy oz.; $/troy oz.

	Close	Previous	High/Low	
Jun	379.9	367.5	381.0	366.3
Jul	380.5	368.1	0	0
Aug	383.2	370.8	384.3	369.4
Oct	387.2	374.8	388.0	373.3
Dec	391.4	378.9	392.5	377.7
Feb	395.6	382.9	396.0	382.0
Apr	399.9	387.1	391.0	391.0
Jun	404.2	391.3	405.0	390.5
Aug	408.5	395.5	400.0	398.5

PLATINUM 50 troy oz; $/troy oz.

	Close	Previous	High/Low	
Jul	511.2	503.6	518.5	500.5
Oct	512.7	504.6	517.0	501.5
Jan	514.2	505.9	516.0	503.0
Apr	517.7	508.4	0	0
Jul	522.4	514.1	0	0

SILVER 5,000 troy oz; cents/troy oz.

	Close	Previous	High/Low	
Jun	543.1	526.4	530.0	530.0
Jul	547.0	530.3	547.5	526.0
Aug	551.5	534.8	0	0
Sep	556.4	539.4	557.0	535.6
Dec	569.1	551.8	569.5	547.0
Jan	573.0	555.6	0	0
Mar	581.4	563.8	582.0	580.0
May	590.3	572.4	586.5	586.5
Jul	599.4	581.2	0	0
Sep	608.5	590.0	0	0

INDICES

REUTERS (Base: September 18 1931 = 100)			
Jun 5	Jun 2	mnth ago	yr ago
1996.7	1998.0	2007.3	1899.5

DOW JONES (Base: Dec. 31 1974 = 100)				
Spot	131.64	132.22	138.38	139.62
Futures	131.36	132.25	138.73	142.44

COPPER 25,000 lbs; cents/lbs

	Close	Previous	High/Low	
Jun	106.50	106.40	108.40	108.40
Jul	107.30	107.20	109.10	106.70
Aug	106.70	106.90	0	0
Sep	106.20	106.80	107.90	106.00
Dec	103.90	106.20	106.50	104.00

CRUDE OIL (Light) 42,000 US galls $/barrel

	Latest	Previous	High/Low	
Jul	20.47	20.52	20.50	20.30
Aug	19.65	19.74	19.68	19.42
Sep	19.15	19.29	19.25	18.98
Oct	18.80	18.96	18.96	18.65
Dec	18.42	18.58	18.55	18.27
Jan	18.24	18.44	18.43	18.15
Apr	17.85	18.17	17.94	17.85

HEATING OIL 42,000 US galls, cents/US galls

	Latest	Previous	High/Low	
Jul	5125	5191	5165	5025
Aug	5155	5212	5187	5050
Sep	5195	5258	5240	5090
Oct	5240	5318	5300	5156
Nov	5300	5378	5320	5210
Jan	5360	5458	5400	5310
Feb	5300	5388	0	0

COCOA 10 tonnes;$/tonnes

	Close	Previous	High/Low	
Jul	1161	1140	1187	1135
Sep	1190	1166	1206	1160
Dec	1220	1200	1240	1198
Mar	1239	1223	1256	1217
May	1257	1235	1260	1228
Jul	1273	1255	1253	1253
Sep	1288	1275	1300	1270

COFFEE "C" 37,500lbs; cents/lbs

	Close	Previous	High/Low	
Jul	128.75	126.30	129.25	126.40
Sep	124.40	121.69	124.60	121.75
Dec	122.50	119.17	122.88	119.70
Mar	121.75	118.40	121.75	119.00
May	121.00	118.75	119.60	119.30
Jul	122.00	119.75	0	0
Sep	123.00	118.50	0	0

SUGAR WORLD "11" 112,000 lbs; cents/lbs

	Close	Previous	High/Low	
Jul	11.17	11.25	11.28	10.98
Oct	11.28	11.30	11.36	11.09
Jan	10.60	10.50	0	0
Mar	10.97	10.97	11.00	10.78
May	10.95	10.97	10.99	10.78
Jul	10.90	10.91	10.90	10.84
Oct	10.61	10.64	0	0

COTTON 50,000; cents/lbs

	Close	Previous	High/Low	
Jul	63.90	65.36	65.00	63.50
Oct	65.05	66.45	66.05	64.68
Dec	64.70	66.65	65.86	64.66
May	66.28	67.70	67.15	66.28
Jul	66.60	67.70	66.60	66.50
Oct	64.35	65.95	64.35	63.95

ORANGE JUICE 15,000 lbs; cents/lbs

	Close	Previous	High/Low	
Jul	180.55	189.50	189.50	180.50
Sep	178.85	189.85	189.25	178.85
Nov	164.00	167.25	166.50	164.05
Jan	159.05	162.60	161.50	159.25
Mar	158.55	162.05	160.50	158.35
May	157.95	161.50	0	0
Jul	157.95	161.50	0	0
Sep	157.95	161.50	0	0

Chicago

SOYABEANS 5,000 bu min; cents/60lb bushel

	Close	Previous	High/Low	
Jul	714/0	705/4	715/0	704/0
Aug	688/2	683/4	689/4	681/4
Sep	650/6	653/4	656/4	648/0
Nov	633/6	639/0	640/0	632/0
Jan	643/2	649/6	649/0	642/0
Mar	652/6	656/4	658/0	651/4
May	656/4	664/0	664/0	657/0
Jul	659/0	665/4	664/0	658/0

SOYABEAN OIL 60,000 lbs; cents/lb

	Close	Previous	High/Low	
Jul	21.42	21.13	21.46	21.15
Aug	21.68	21.40	21.69	21.40
Sep	21.86	21.58	21.86	21.60
Oct	22.05	21.67	22.07	21.78
Dec	22.38	22.11	22.39	22.12
Jan	22.55	22.20	22.56	22.37
Mar	22.80	22.70	22.92	22.80
May	23.00	22.82	23.25	23.00

SOYABEAN MEAL 100 tons; $/ton

	Close	Previous	High/Low	
Jul	208.5	208.7	209.5	207.0
Aug	201.8	203.2	203.7	201.4
Sep	195.0	197.7	198.0	194.4
Oct	188.5	192.0	192.0	188.0
Dec	186.7	190.7	191.5	186.5
Jan	186.5	190.5	190.5	186.0
Mar	185.5	190.0	189.0	185.5
May	186.2	186.5	186.5	185.0

MAIZE 5,000 bu min; cents/56lb bushel

	Close	Previous	High/Low	
Jul	261/2	264/6	265/0	260/6
Sep	242/6	245/4	245/6	242/4
Dec	238/4	240/4	241/2	238/0
Mar	246/4	248/4	248/6	246/0
May	250/4	0	252/4	250/2
Jul	251/0	252/6	253/4	251/0
Sep	238/4	238/0	239/0	236/0
Dec	237/0	234/4	237/0	234/0

WHEAT 5,000 bu min; cents/60lb-bushel

	Close	Previous	High/Low	
Jul	388/2	394/5	396/0	387/4
Sep	396/0	401/4	402/4	395/0
Dec	409/6	415/6	416/0	408/4
Mar	416/0	420/2	422/0	415/0
May	408/0	409/0	409/0	405/0
Jul	371/0	376/0	374/0	370/0

LIVE CATTLE 40,000 lbs; cents/lbs

	Close	Previous	High/Low	
Jun	68.82	68.97	69.22	68.68
Aug	67.87	68.10	65.47	67.72
Sep	68.60	68.60	0	0
Oct	70.62	70.92	71.07	70.50
Dec	71.27	71.80	71.68	71.20
Feb	71.30	71.90	71.55	71.00
Jun	70.50	70.85	70.70	70.50

LIVE HOGS 30,000 lb; cents/lbs

	Close	Previous	High/Low	
Jun	48.15	48.75	48.55	48.00
Jul	47.20	47.97	47.85	47.10
Aug	45.25	45.82	45.80	45.12
Oct	41.95	42.37	42.35	41.67
Dec	44.20	44.55	44.55	44.00
Feb	46.05	46.32	46.30	45.90
Apr	43.60	44.00	44.00	43.60
Jun	47.15	47.45	47.45	47.15

PORK BELLIES 40,000 lbs; cents/lb

	Close	Previous	High/Low	
Jul	30.45	32.30	32.40	30.35
Aug	30.72	32.55	32.40	30.60
Feb	47.72	49.72	49.30	47.72
Mar	47.20	49.20	49.10	47.20
Jul	49.40	51.40	50.60	49.40
Aug	46.05	46.60	48.60	46.05

LONDON STOCK EXCHANGE

FT-SE regains 2,100 in equity rally

THE LONDON equity market staged a successful if somewhat technical rally yesterday in the wake of the marginal recovery in Hong Kong and a steady performance from the pound. Trading volume remained unimpressive but initial losses in the blue chip stocks inspired bargain-hunting by the big investment institutions. By the close, the FT-SE Index had put on nearly nineteen FT-SE points, comfortably regaining the 2,100 mark abandoned so hastily on Monday morning.

While the underlying implications of the turmoil in China remain disturbing for global stock markets, yesterday's rally implied somewhat of a return to fundamentals by analysts of the London equity sector. For the short term, a rally in equities is thought likely as high domestic interest rates continue to rein in consumer spending, although much depends on whether domestic rates are forced higher again and on the course of international events.

However, few trading houses were prepared to take an optimistic line yesterday morning. Share prices opened lower after market strategists at the big securities houses had rehearsed at their respective morning meetings the multiple bear factors in the marketplace. Market makers marked share prices lower and, in the absence of business, the loss was extended to nearly 11 Footsie points.

But few sellers could be found, and a recovery set in within a couple of hours of the market opening. The rally was cautious and thinly-supported but gathered pace as London hoped for positive signs of an easing in credit policies by the Federal Reserve.

The market moved into plus territory at mid-session and the advance was extended as Wall Street opened higher. With nothing to upset it from the currency and domestic money markets, the equity sector closed at the day's best.

The FT-SE Index finished a net 18.9 higher at 2,107.4, ending a run of five consecutive downward sessions. Seaq turnover of 445.8m shares, against Monday's 359.2m, included a high proportion of inter market deals.

Some traders pointed to the erratic share movements of the past two sessions as yet another example of the vagaries of post-Crash markets. Offers to sell stock on the IDB (Inter dealer broker) screens, where market makers balance their open market positions, disappeared as soon as the mood brightened yesterday. Today is Derby Day, the setting for the famous UK horse race, and some traders commented that this will affect attendance in the London stock market this morning.

Although it was a calm session for the pound and for London money markets, nervousness over sterling remains a key factor.

Account Dealing Dates

*First Dealings:	May 22	Jun 5	Jun 19
Option Declarations:	Jun 1	Jun 15	Jun 29
Last Dealings:	Jun 2	Jun 16	Jun 30
Account Day:	Jun 12	Jun 26	Jul 10

*New time dealings may take place from 9.00 am two business days earlier

FINANCIAL TIMES STOCK INDICES

	Jun 6	Jun 5	Jun 2	Jun 1	May 31	Year Ago	1989 High	1989 Low	Since Compilation High	Since Compilation Low
Government Secs	84.43	84.43	84.61	84.68	85.43	89.72	89.29 (6/2)	84.43 (5/6)	127.4 (9/1/35)	49.18 (3/1/75)
Fixed Interest	96.10	96.25	96.23	96.37	96.94	96.15	99.58 (15/3)	95.93 (4/1)	105.4 (28/11/47)	50.53 (3/1/75)
Ordinary	1753.0	1737.0*	1745.5	1745.6	1755.7	1445.1	1837.5 (19/5)	1447.8 (3/1)	1926.2 (16/7/87)	49.4 (26/6/40)
Gold Mines	180.7	175.5	171.4	171.6	173.5	236.0	196.1 (26/3)	154.7 (17/2)	734.7 (15/2/83)	43.5 (26/10/71)

	Jun 6	Jun 5	Jun 2	Jun 1	May 31	Year Ago
Ord. Dl. Yield	4.54	4.58	4.56	4.58	4.53	4.68
Earning Yld %(full)	10.99	11.10	11.04	11.04	10.97	11.73
P/E Ratio(Net)(☆)	11.02	10.91	10.97	10.97	11.04	10.43
SEAQ Bargains(5pm)	24,895	24,555	31,561	25,853	23,855	25,738
Equity Turnover(£m)†	-	1210.90	1633.45	1429.00	1589.84	1277.39
Equity Bargains†	-	28,511	33,112	29,460	28,175	29,279
Shares Traded (ml)†	-	426.0	611.1	522.5	606.2	483.2

Ordinary Share Index, Hourly changes

Opening	10 a.m.	11 a.m.	12 p.m.	1 p.m.	2 p.m.	3 p.m.	4 p.m.
1732.8	1729.5	1734.2	1737.8	1739.2	1743.4	1743.6	1749.0

DAY'S HIGH 1753.0 DAY'S LOW 1727.8

Basis 100 Govt. Secs 15/10/26, Fixed Int. 1928, Ordinary 1/7/35, Gold Mines 12/9/55, SE Activity 1974, ☆Nil 10.92 †Excluding intra-market business. *June 5 opening index unavailable, not 1745.5 as stated. Corrected high of 1737.0.

● S.E. ACTIVITY

Indices	Jun 5	Jun 2
Gilt Edged Bargains	104.7	123.8
Equity Bargains	184.7	214.5
Equity Value	2447.5	3301.6
5-Day average		
Gilt Edged Bargains	112.5	111.2
Equity Bargains	192.6	190.4
Equity Value	2882.2	2831.0

● London Report and latest Share Index: Tel. 0898 123001

TRADING VOLUME IN MAJOR STOCKS

The following is based on trading volume for most Alpha securities dealt through the SEAQ system yesterday until 5 pm.

Stock	Volume 000's	Closing Price	Day's change	Stock	Volume 000's	Closing Price	Day's change	Stock	Volume 000's	Closing Price	Day's change	Stock	Volume 000's	Closing Price	Day's change
ASDA Group	1,600	172	-1	Cookson	478	328	+4	Laporte	84	432	+1	Royal Bk of Scotland	158	379	+4
Allied-Lyons	970	435	+2	Courtaulds	3,275	330½	+½	Legal & General	441	310	+2	Royal Insurance	1,600	393	
Amstrad	2,900	94	+2	Dalgety	455	360	+2	Lloyds Bank	1,300	345	+3	STC	2,900	345	+8
Argyll Group	6,600	204	-1	Dixons	1,500	147	+3	LASMO	959	462	+3	Saatchi & Saatchi	541	309	+3
Ass. Brit. Foods	49	357		Eng. China Clays	929	466½	-4½	Lonrho	878	271	+1	Sainsbury	1,000	242	+3
BAA	645	354	+3	Enterprise Oil	290	537	+2	Lucas	302	629	+17	Scot & Newcastle	2,100	313	+10
BAT Inds.	6,300	593		FKI Babcock	767	167	+2	MB Group	113	199		Sears	846	119¼	+1¼
BET	559	279		Fisons	1,800	304½	+2½	MEPC	639	563	+9	Shell Transport	1,600	406	+4½
BICC	1,600	509	+4	Gateway Corp.	1,100	205½		Marks & Spencer	1,800	184	+3	Siebe	405	501	-2
BOC	1,800	479	-1	General Accident	1,400	944	-6	Maxwell Comm.	200	187	+1	[illegible]	42	313	+3
BPB Inds.	254	237½	+1½	General Elect.	3,200	235	+2	Midland Bank	1,100	345	+4	Smith & Nephew	2,200	131½	-½
BTR	2,200	363	+5	Glaxo	1,800	1356	+10	Nat. West. Bank	1,000	300	+4	Smiths Industries	1,100	305	+4
Barclays	1,465	447	+8	Globe Inv.	218	173½		Next	808	144	-1	Standard Chartered	1,000	506	-1
Bass	426	937	+3	Glynwed Int.	1,200	290		Northern Foods	455	302		Storehouse	8,300	155	+2
Beecham	1,600	608	+2	Granada	1,800	341	+1	Pearl	1,000	445	+9	Sun Alliance	466	1091	+23
Blue Circle	430	555	+1	Grand Met.	2,600	542		Pearson	97	694	+7	T&N	404	234	+8
Boots	3,700	204½	+4½	GUS A	276	1826	+11	P&O	622	650	+12	TSB	956	105	+½
Brit. & Comm.	2,100	175	+7	GRE	2,800	202	-2	Pilkington	1,300	226	+1	Tarmac	1,900	317	
Brit. Aerospace	2,300	695	+13	GKN	251	400	+10	Plessey	1,700	263	+6	Tate & Lyle	1,300	255	-4
British Airways	2,500	196	+1	Guinness	1,400	486	-2	Polly Peck Intl.	1,300	272	-5	Taylor Woodrow	431	643	+6
British Gas	9,700	176	+1¼	Hammerson 'A'	40	784	+12	Prudential	1,053	179½	+3½	Tesco	2,500	176	+3
British Land	1,100	356	+7	Hanson	11,000	198½	+3½	RHM	2,400	442	+7	THORN EMI	989	702	+14
BP	4,025	288	+2½	Harrisons & Cros.	518	171		RMC	421	740	+13	Trafalgar House	878	363	-2
British Steel	9,600	88¼	+1	Hawker Siddeley	1,900	705	+22	RTZ	1,200	499	+2	Trusthouse Forte	2,700	322	+3
British Telecom	8,000	254½	+5½	Hillsdown Hldgs	1,000	273	+4	Racal	3,700	506	-18	Ultramar	381	299	+2
Burmah Oil	266	578	-4	IMI	1,100	228	+6	Rank Org.	514	942	+3	Unilever	578	545	+5
Burton	1,600	213	+5	Imp. Chem.	1,600	1258	+2	Reckitt & Colman	208	1118	+9	United Biscuits	2,300	337	+8
Cable & Wireless	11,700	465	+15	Inchcape	1,900	253	+2	Redland	531	578	+8	Utd. Newspapers	256	432	+3
Cadbury Schweppes	1,400	352	+3	Jaguar	1,900	344	+2	Reed International	2,350	404	+12	Wellcome	3,250	433	-9
Carlton Comms.	678	848	+4	Kingfisher	1,500	296	+9	Reuters	1,764	785	-11	Whitbread 'A'	695	350	-2
Commercial Union	364	379	+3	Ladbroke	1,700	585	+17	Rolls Royce	3,230	189½	+5	Williams Hldgs.	528	246	+6
Cons. Gold Fields	1,300	1213	+18	Land Securities	2,200	567	+18	Rothmans	181	522	-3	Wimpey	288	274	+1

Mixed reception for Argyll

Shareholders in Safeway supermarket owner Argyll showed their disappointment with the company's announcement of a 35 per cent improvement in full year profits and the stock dipped to 201p before closing a penny down on the day at 204p. Turnover was a busy 6.6m, including a single block of 1.2m shares.

Analysts, however, generally expressed satisfaction with the result, which was in line with forecasts. "Argyll has had a good run for four weeks and there was some profit-taking," explained Mr John Woolman of Citicorp Scrimgeour Vickers. He said that the tax charge was lower than he had expected and was raising his forecast for the current year's eps from 17.1p to 17.6p. "The analysts meeting was very positive too," he added.

Mr Bill Currie, analyst with Hoare Govett, said that part of the share's weakness was due to the hope that the profits statement would be accompanied by an announcement of cross shareholdings with Casino of France and Ahold of The Netherlands. Both analysts are sticking with their profits forecasts for the current year, both on £230m after exceptional items.

Wellcome hit

Wellcome were hit hard mid-way through the trading session when the rest of the market was turning higher. The stock fell to 427p before closing 9 down on balance at 433p after turnover of 3.6m shares.

Most marketmakers related the weakness to a report from the Fifth International Conference on Aids held in Montreal that the California company Genentech had made progress on a potential rival, called CD4, to Wellcome's moneyspinner Retrovir.

However analysts were unperturbed by the news, pointing out that the report said only that the drug was safe, not that it helped Aids sufferers. One leading analyst even suggested that the next stage was to test CD4 in combination with Retrovir "which would be positive for both companies."

Agency broker James Capel said that a market suggestion that it had bought a large number of Wellcome put options "was completely untrue." The most convincing reason of the day for the setback came from one analyst who said that the fall was triggered when a single buyer sold a large line of stock. A string of six 100,000 share deals was registered on the Seaq ticker within a hectic 15 minutes around lunchtime.

Property view

A financial commentator's view that the prospective discounts to asset value for most property companies are too large, putting the sector on the lowest rating for 15 years, caught the market offguard yesterday. The author nominated sector leader Land Securities, with a prospective discount to asset value of 50 per cent, as the best example of the current caution being taken a step too far.

The response was immediate. An initial flurry of traded options activity had marketmakers chasing round for stock of Land Securities and the shares bounded to 567p for a rise on the session of 18. Institutional operators were slow to respond but private investors warmed to a whole range of property stocks, many of which recorded the largest rises for some time.

Insurances were the scene of some active trading. Composites attracted keen interest, with General Accident upset by talk of a possible rights issue and news of dreadful figures from the Bank of New Zealand; GA has a 52 per cent stake in the troubled NZL. But dealers remained positive on the stock and the price rallied from 930p to close a net 6 off at 944p on turnover of 1.4m. Guardian Royal Exchange also featured, the shares easing to 200p amid whispers of an imminent profits downgrading, before steadying to close 2 down at 202p on 2.8m. Sustained buying lifted Sun Alliance 23 to 1091p with the market picking up suggestions that America's Chubb had moved to increase its shareholding, last revealed as 7 per cent.

An industry report that Mr John Elliott's Elders IXL may have found buyers for part or the whole of the 23.6 per cent stake in Scottish & Newcastle aroused speculation and the shares gained surged 10 to 313p. Elders has been ordered to reduce the holding to below 10 per cent within the next twelve months. Regional brewer Marston Thompson went higher after a property revaluation. Ladbroke regained ground to close 17 dearer at 585p.

Building issues staged a strong recovery after early weakness. The heavy end of the sector responded to some sustained buying interest and talk of a stock shortage. RMC, in particular, rose 13 to 740p while Rugby added 6 at 205p.

Magnet, ahead of Friday's closing date for the MBO, jumped 9 more to 283p.

Marshalls were 6 ahead at 274p after preliminary figures – showing pre-tax profits up from £13.12m to £25.03m – described as "super" by dealers. But there were plenty of sellers in Anglia Secure Homes which revealed interim profits of £2.76m compared with £2.41m. Dealers said the figures were "no more than average," and said there were worries about the second half and future profits. Mr Richard Hopewell, building analyst at Swiss Bank Stockbroking, is forecasting pre-tax profits of £6m for the full year, but recommends a "switch to other housebuilders."

The early action in stores was concentrated in Storehouse, shares of which fell away to 148p following a single trade of 2.6m shares, interpreted by the market as possibly the sale of a chunk of the shares by Mr Asher Edelman. But further trades reported on the seaq ticker revealed that the trade was nothing more than a "bed and breakfast" deal and Storehouse shares subsequently rallied to end the session a net 2 higher at 155p; turnover finally reached 8.3m. Ward White gained 5 more to 301p, still stimulated by stories that Mr Edelman, the US arbitraguer, had quietly accumulated a near disclosable stake.

Lambert Howarth shares plummeted 39 to 177p, after 165p, as the bid from Peter Black lapsed.

British Telecom continued to attract plenty of buying interest triggered by switching out of the highly vulnerable Cable & Wireless; BT shares eventually settled a net 5½ stronger at 254½p with turnover improving to 8m. "It was the obvious switch," said one analyst who added that BT "anyway displays traditional defensive qualities."

The Racal pair, Electronics and Telecom, were hit by what marketmakers described as "a bit more than plain and simple profit-taking." Dealers noted growing selling pressure from US operators, previously seen as big bulls of the shares, and took the view that a large institutional selling order had probably been carried out. Electronics lost 18 to 506p on turnover of 4.2m while Telecom dipped 11 to 490p.

Ferranti fell back to close 1 easier at 97½p, after 97p, on turnover of 2.6m shares following a further downgrading by Kleinwort Benson, the securities house. Mr Christopher Tucker lowered his forecast of current year pre-tax profits to £38m, "largely as a result of the impact of higher interest rates.

The prospect of sales at the Paris Air Show, which starts at the end of the week, helped shares of companies in, or with sales to, the aerospace sector. Hawker Siddeley was one of the top performers, jumping 22 to 705p on good volume of 1.9m shares. British Aerospace showed no sign of easing back on its recent strength and climbed another 13 to 698p.

Also on the way up were Rolls Royce, 4 to the good at 189p, Lucas Industries, 17 better at 629p, and defence electronics specialist Dowty, which finished on 277p, a rise of 11.

Bridon firmed 8 to 208p on further vague bid speculation, while more precise talk of a takeover move, from Vickers, for Fairey Group resurfaced and prompted speculative buying interest. Fairey jumped 18 to 246p and Vickers improved 4 to 211p on a story that recent disposals by Sir Ron Brierley, the New Zealand entrepreneur, were a prelude to raising his 8.67 per cent stake in the company.

The Foods sector was stimulated by news of the purchase by BSN of France of parts of RJR Nabisco's European operations for around $2.5bn. United Biscuits was the main beneficiary. It was said to have been in the running for parts of the Nabisco empire and there was some relief that it would not have to find the cash, perhaps through a rights issue, to pay for them.

Such sentiment also helped RHM, 7 better at 442p, and Unilever, 5 to the good at 545p, and Cadbury Schweppes which closed at 352p, up 3 on the day. "The Food sector is a sellers market again," said one dealer, adding, "there are plenty of unsatisfied buyers around."

Unigate was another strong performer, climbing 10 to 380p as 2.8m shares changed hands.

"It looks like Mr Goodman's at it again," said a dealer, referring to Mr Larry Goodman, the Irish entrepreneur, who holds an 8.83 per cent stake in the company.

Full-year profits down 50 per cent and well below expectations knocked De La Rue down to 288p before thoughts of a bid from either Mr Robert Maxwell or Mr Carlo de Benedetti, prompted speculative buying. The shares then rallied smartly to close up 5 on the dy at 315p.

Approval of the purchase of Independent Television Publications for £113m put Reed International up 12 to 404p while hopes of predatory interest by Sir James Goldsmith raised DRG 16 to 506p.

News of Great Portland's good preliminary statement and intention to maintain the dividend payment after a one-for-five scrip issue set the seal on a good day for properties. Great Portland rose 6 to 370p and more sizeable gains occurred in stocks recognised as possible bid targets such as Greycoat (up 18 at 490p) and Laing (13 better at 530p). Doubled profits lifted Rowlinson 30 to 250p while Regalian went 10 higher to 123p ahead of Wednesday's annual results.

The surprise announcement that the Grace-Pinto concert party had built up a stake of 5.68 per cent in TR Technology encouraged support for the shares which closed 7 up at 92p.

Beleaguered British & Commonwealth managed a rally of 7 to 175p following the proposed sale of its freehold interest and of a major share of the rental income in Cayzer House in London.

British Gas headed the turnover list in the energy sector. The shares were well supported and finally 1¼ ahead at 176p in front of Thursday's preliminary figures; analysts at Kleinwort Benson are forecasting a net dividend of 9p – the top end of the range – and rate the shares a buy. Dealers said there had also been persistent overseas support for the shares.

Premier raced up 4 to 101½p after the preliminary figures and news of the encouraging gas discovery in the Southern Basin in the North Sea.

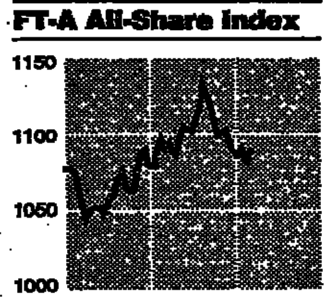
The tensions overhanging London stocks with exposure in the Far East eased somewhat following the steadier trend in the Hong Kong stock market, which rallied by 2.7 per cent overnight after Monday's heavy fall.

However, Cable & Wireless, the telecoms group, continued their roller-coaster ride. After opening lower around 435p, the price recovered on the back of US buying, and closed 15 ahead at 465p. Dealers said there were still no signs of selling by Japanese interests.

Standard Chartered settled a fraction off at 506p and Time Products lost a further 20 to 205p.

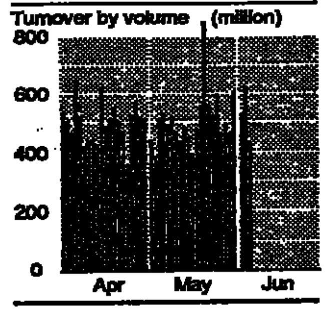
■ Other market statistics, including the FT-Actuaries Share Index and London Traded Options, Page 38

FT-A All-Share Index



Equity Shares Traded

Turnover by volume (million)



NEW HIGHS AND LOWS FOR 1989

NEW HIGHS (114).

AMERICANS (33) CANADIANS (11) BANKS (3) Joseph (Leo), Schroders, Sec. Pacific, BREWERS (1) Marston Thompson, BUILDINGS (1) Anglo United, CHEMICALS (3) Astra Hldgs., Foseco, MTM, STORES (2) Asprey, Body Shop Int., ELECTRICALS (4) ENGINEERING (1) Fairey Grp., FOODS (6) INDUSTRIALS (15) Aalst Assoc., Bridon, Brit. Aerospace, Colorgen, Davies (D.Y.), Dover, Flexello, Green (E.) Part., Kalon, Reuma-Repola, Reliance Sec., S.E.P. Indl., Schlumberger, Security Archives, T & N, INSURANCE (6) MOTORS (1) Cowie (T), NEWSPAPERS (2) Intl. Thompson, News Corp., PAPERS (2) Acsis, Geers Gross, PROPERTY (2) Billingsgate City Sec., Rowlinson, SHIPPING (2) Craig Shipping, Runciman (W.), SHOES (1) Lambert Hth., SOUTH AFRICANS (2) Barlow Rand, SA Brews., TRUSTS (11) OILS (8) OVERSEAS TRADERS (1) Gt Nordic, MINES (4) THIRD MARKET (3) Eglinton Expln., Paddington, Whitegate Leisure.

NEW LOWS (54).

BRITISH & O'SEAS GOVT. STLG. ISSUES (1) Euro Inv Bk 11pc 2002, LOANS (1) N'wide Anglia 3½pc 2021, FOREIGN BONDS (1) Ireland 9¾pc 1991-96, CANADIANS (1) Gt. Pac. Res., BANKS (3) Hambros, Ottoman Bk., TSB, BREWERS (1) Allied Lyons, BUILDINGS (4) STORES (3) ELECTRICALS (6) INDUSTRIALS (8) Beeson Gp., Cannon St. Inv., De La Rue, Kingsgrange, Metal Closures, Oakwood, Walpac, Wills Grp., MOTORS (3) Evans Halshaw, Hartwell, March, PAPERS (4) Hunterprint, Saatchi 8¾pc Pf 2003, VPI, Waverley Cameron, PROPERTY (4) LETINVEST 10¼pc 2012, Mountleigh 5¼pc Pf., Pennant Props., Warringtons, TRUSTS (4) Ambrose Inv., Dominion Int., London Forfaiting, Siam Fd., OILS (2) NZ Oil & Gas, Southwest Res., MINES (2) Emperor Mines, Mount Bergam, THIRD MARKET (1) Stela.

APPOINTMENTS

Group managing director of Airlines of Britain

■ AIRLINES OF BRITAIN HOLDINGS (British Midland Airways, Manx Airlines, Loganair, and London City Airways) has appointed Mr John Wolfe as group managing director, and Mr Austin Reid as managing director of British Midland Airways. Mr Wolfe is a shareholder of the BBW Partnership, ultimate holding company of the group, and Mr Reid is group finance director, a post he retains.

■ BIMEC INDUSTRIES has appointed Mr Roger Derwent to the new post of financial director - operations, and to the group operations board.

■ Mr J.A. Nightingale, a non-executive director of Courtaulds, will not be seeking re-election at the annual meeting in July following his appointment as executive chairman of the Apparel, Knitting and Textiles Alliance.

■ CHARTERHOUSE TILNEY, agency stockbroking arm of Charterhouse, has made the following appointments: Mr Robert Jackson (director, corporate finance); Mr Michael Polnik (director, institutional sales); Mr Giles Warman (director, European sales); Mr Jeremy McKeown and Mr Kurt Mayer (assistant directors, institutional sales). In Liverpool: Mr Jeffrey Whitfield (director, compliance); Mr Peter English (director, information services); and Mr Michael Walsh-Clayton (assistant director, finance).

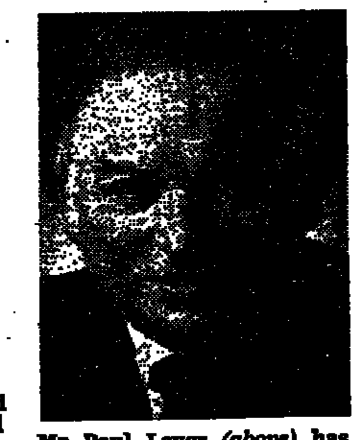
■ ZURICH INSURANCE has appointed Mr Dennis White as chief executive for the UK and Ireland from August 1, and as managing director of Zurich Life. He is managing director of the reinsurance and marine division of London and Edinburgh Insurance Group, and will succeed Mr Frank Hall who is retiring, but who becomes a non-executive director of Zurich Life.

■ Mr John Rathbone has been appointed group finance director of the TARGET GROUP, in addition to his post as appointed actuary of Target Life Assurance Co.

■ Mr Gerry Robinson, chief executive of Compass Group, has been appointed a non-executive director of MOLYNX HOLDINGS.

■ THE LEWIS'S GROUP, Salford, has appointed Ms Anita Walker as marketing director. She was managing director of Schofields, Leeds.

■ Mr Robert L. Johnson has been appointed chairman and chief executive officer of Price & Pierce International Inc, a wholly-owned subsidiary of PRICE & PIERCE GROUP.



Mr Paul Lever *(above)* has been appointed executive chairman of SPONG HOLDINGS, succeeding Mr Stephen Barclay who becomes business development director. Mr Lever was managing director of Crown Berger Europe, paints division of Williams Holdings.

■ Mr R.B. Pointon, operations director of IMI Yorkshire Fittings, has been appointed managing director in succession to Mr P.C. Roberts, now an executive director of parent company, IMI. Mr Pointon also assumes responsibility for Raccord Orleanais, France, and R. Woeste & Co "Yorkshire", West Germany. Mr A.N. Morris has been appointed president of Norgren Martonair (Canada) Inc, part of IMI fluid power group. He was techno-commercial manager for the group in Birmingham.

■ ALPHAMERIC has appointed Dr Donald Spencer as a non-executive director. He is deputy non-executive chairman of Plasmec.

■ HADLEIGH INDUSTRIES has appointed Mr Freddie Fane as group deputy chairman, and managing director of its automotive division. He was with Tiphook.

■ BERNSTEIN GROUP has appointed Mr Jim Stott as managing director.

■ Mr Ken Edwards has been appointed national sales manager, HILL SAMUEL PROFESSIONAL ADVISER SERVICES.

■ Mr Niels Erik Seest has been appointed managing director of BALTICA-SKANDINAVIA INSURANCE CO (U.K.). He was assistant general manager of Copenhagen Re, Denmark, and succeeds Mr W.E. Berry who has resigned but remains a consultant.

■ Mr Heikki Mairinoja has been apppointed president (chairman) of UPONOR, Leeds, a subsidiary of Uponor Group, Finland. He was executive vice president (deputy chairman), and succeeds Mr Heimo Eloranta, who remains on the board, and has been appointed a deputy member of the board of Asko Oy, Uponor's parent company.

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AUTHORISED UNIT TRUSTS

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Gr's
Abbey Unit Tst Mngrs (1000)H						
80 Holdenhurst Rd, Bournemouth 0345 717373						
High Income						
American Income	6	56.04	56.61	59.16	+0.82	4.63
Gilts & Fixed Int	6	108.6	108.6	115.1	-0.3	8.69
High Inc Equity	6	131.2	131.2	140.4	-0.2	4.52
Worldwide Bond	6	201.2	201.2xd	213.2	+2.9	4.55
Capital Growth						
American Growth	6	190.1	192.0	204.3	+0.8	1.21
Asian Pacific	6	91.03	91.03	97.36	-1.29	0.72
Assets & Earnings	6	157.3	157.3xd	168.3	-0.2	1.54
Capital Income Acc	0	84.85	84.85	84.91	+0.02	4.71
Comdty & Energy	6	99.91	99.91	106.9	+0.6	0.98
1992 Enterprise	6	57.50	58.66	62.39	-0.18	2.89
European Capital	6	85.27	85.85	91.33	-0.44	0.82
General	6	173.2	176.2	187.5	-0.1	2.40
International		47.17	47.17	50.05	-0.05	1.00
Japan	6	107.8	107.8	115.3	-0.3	0.00
Mastertrust	6	85.06	85.96xd	90.96	-0.04	1.57
UK Growth Acc	6	199.2	199.2	213.1		1.06
UK Growth Dist	6	132.9	132.9	142.2	-0.1	1.58
US Emerging Cos	6	57.37	59.16	62.94	-0.43	0.00
Income & Growth	6	285.90	285.9xd	305.8	+0.4	3.75
Ethical	6	47.91	49.16xd	52.30	-0.3	2.39
Abtrust Management Ltd (1000)H						
10 Queens Terrace Aberdeen AB9 1QJ 0800 833580						
Amer Inc & Growth	5	31.53	31.53xd	33.66	-0.73	3.37
European	5¼	62.69	62.88	67.13	-0.50	0.00
European Income	5¼	62.56	62.56xd	66.78	-0.76	3.18
Exempt	1	792.0	792.0	826.6	-2.00	2.30
Extra Income	5	42.02	42.02xd	44.86	-0.05	5.10
F East Emerg Econ	5¼	43.61	43.61	46.71	-0.80	0.92
Fund Inv Tst	5	120.4	120.4	128.5	-0.40	2.56
Do Accum	5	187.5	187.5	200.2	-0.60	2.58
Gilt & Fixed Int	5¼	21.13	21.13xd	22.55	+0.04	10.61
Income & Growth	5¼	71.44	71.44	76.26	-0.06	4.35
Intl Income	5¼	62.70	62.70xd	66.93	-0.06	5.35
Japan	5¼	184.3	184.3	196.8	-0.10	0.00
Pacific	5¼	332.4	332.4	356.0	-5.30	0.89
Secure Income	5	192.2	192.2xd	205.1	-0.80	6.39
Sentinel Spec Sits	5	269.9	269.9xd	288.1	-0.20	1.73
Smaller Companies	5¼	60.39	60.39	64.47	-0.02	2.43
Special Situations	5¼	69.68	69.68	74.38	-0.01	1.66
UK Growth	5	36.43	36.43	38.89	-0.08	2.70
UK Top 100	5¼	25.18	25.18xd	26.88	-0.12	3.37
World Growth	5	49.96	49.96xd	53.34	-0.23	0.51
Acorn Unit Trust Managers Ltd (1100)F						
1 White Hart Yd, London Bridge SE1 1NX 01-407 5966						
Ethical Tst	5	103.8	103.8	109.0	+0.4	3.00
Aegis Unit Tst Mngmt Ltd (1400)F						

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Gr's
(Accum Units)	6	53.89	53.90	57.65	+0.16	0.83
Mngd P'folio Acc	6	69.25	69.97	74.83	+0.03	1.65
Money Market UT	4	49.07	49.08xd	51.03	+0.01	10.82
North American	6	126.1	126.2xd	135.0	+1.0	0.39
(Accum Units)	6	155.8	156.8	166.6	+1.1	0.39
Smaller Cos	6	182.6	182.6	195.3	-0.4	1.30
(Accum Units)	6	202.4	202.5	216.6	-0.3	1.30
Meridian Income	6	106.8	107.7	115.2	+0.2	3.73
(Accum Units)	6	109.5	110.5	118.28	+0.2	3.73
Meridian Growth	6	115.0	115.8	123.8	+0.3	1.53
Midland Personal Pension Unit Trust						
British	6	55.99	56.61	60.22	+0.35	2.33
European Growth	6	56.11	56.17	59.75	-0.51	0.39
Gilt & Fixed	6	49.07	49.08	52.21	-0.03	8.69
Income	6	53.11	53.97	57.42	+0.21	3.60
Japan Growth	6	55.48	55.83	59.39	-0.69	0.00
Managed	6	54.52	55.37	58.90	+0.02	1.65
Money Market	6	52.30	52.30	55.43	+0.01	10.80
North American	6	59.01	60.18	64.02	+0.56	0.39

	Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Gr's
UK Equity Inc	5	73.48	73.48xd	79.32	+0.08	3.15
UK Equity Acc	5	80.82	80.82xd	87.24	+0.08	3.15
European Inc	5	110.3	110.30xd	118.00	-0.9	0.61
European Acc	5	114.30	114.30xd	122.2	-1.0	0.61
Nth American Inc	5	65.76	65.76	69.86	+1.05	1.44
Nth American Acc	5	68.19	68.19	72.45	+1.09	1.44
Japan Inc	5	114.00	114.00	121.90	+0.1	0.00
Japan Acc	5	114.30	114.30	122.20		0.00
UK High Inc Eq Inc	5	71.05	71.05	76.77	+0.34	5.87
UK High Inc Eq Acc	5	78.92	78.92	85.28	+0.39	5.87
Hong Kong Inc	5	33.56	33.56	35.78	+2.1	3.73
Hong Kong Acc	5	34.71	34.71	37.02	+2.17	3.73
Swiss Equities Inc	5	35.15	35.15	37.63	-0.19	1.29
Swiss Equities Acc	5	35.45	35.45	37.96	-0.19	1.29
W'wide Bond Inc	5	51.62	51.62	54.51	+0.06	5.95
W'wide Bond Acc	5	53.30	53.30	56.29	+0.07	5.95
Emerging Asia Inc	5	77.34	77.34xd	82.92	-1.21	0.00
Emerging Asia Acc	5	77.34	77.34xd	82.92	-1.21	0.00

GUIDE TO UNIT TRUST PRICING

INITIAL CHARGES
These represent the marketing, administrative and other costs which have to be paid by new purchasers. These charges are included in the price when the customer buys units.

OFFER PRICE
The price at which units may be bought.

BID PRICE
The price at which units may be sold.

CANCELLATION PRICE
The maximum spread between the offer and bid prices is determined by a formula laid down by the government. In practice, unit trust managers quote a much narrower spread. As a result, the bid price is often set well above the minimum permissible price which is called the cancellation price in the table. However the bid price might be moved to the cancellation price in circumstances in which there is a large excess of sellers of units over buyers.

TIME
The time shown alongside the fund manager's name is the time at which the unit trusts' daily dealing prices are normally set unless another time is indicated by the symbol alongside the individual unit trust name. The symbols are as follows ▼ - 0001 to 1100 hours; ♦ - 1101 to 1400 hours; ▲ - 1401 to 1700 hours; ● - 1701 to midnight.

HISTORIC PRICING
The letter H denotes that the managers will deal on a historic price basis. This means that investors can obtain a firm quotation at the time of dealing. The prices shown are the latest available before publication and may not be the current dealing levels because of an intervening portfolio revaluation or a switch to a forward pricing basis.

FORWARD PRICING
The letter F denotes that prices are set on a forward basis so that investors can be given no definite price in advance of the purchase or sale being carried out. The prices appearing in the newspaper show the prices at which deals were carried out yesterday.

The most recent report and scheme particulars can be obtained free of charge from fund managers. Other explanatory notes contained in last column of the FT Unit Trust Information pages.

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Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Gross

Windsor Trust Mngs Ltd (1200)F

Allied Dunbar Assurance Plc

City of Edinburgh Life Assurance

Devonshire Life

Assicurazioni GENERALI SpA

Irish Life Assurance Co Plc—Contd.

MGM Assurance(z)

NEL Britannia Assce Co Ltd—Contd.

OTHER UK UNIT TRUSTS

INSURANCES

Continued on next page

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	Bid Price	Offer Price	+ or –	Yield Gross
Premium Life Assurance Co Ltd				
37–39, Perrymount Road Haywards Heath 0444 458721				
American	134.0	142.0	+1.0	–
Building Soc. Fd.	171.0	180.0	–	–
Balanced	281.0	296.0	–	–
European	171.0	180.0	–1.0	–
GT Managed	173.0	183.0	–	–
Gartmore Mngd.	115.0	122.0	–1.0	–
German	117.0	124.0	–1.0	–
Gilt	178.0	188.0	–	–
Global	48.0	51.0	–	–
High Inc.	121.0	128.0	–	–
International Equity	192.0	203.0	–1.0	–
Japan	235.0	248.0	+1.0	–
Managed	63.0	67.0	–	–
Property	281.0	296.0	–	–
R. W. Imperial Gold	146.0	154.0	–	–
UK Equity	366.0	386.0	–	–
Pension Funds				
American	153.0	162.0	–	–
Building Soc. Fd.	171.0	180.0	–	–
Balanced	217.0	229.0	–	–
European	170.0	179.0	–	–
German	106.0	112.0	–	–
Gilt	153.0	162.0	–	–
International Equity	142.0	150.0	–	–
Japan	137.0	145.0	–	–
Managed	64.0	68.0	–	–
Property	216.0	228.0	–	–
UK Equity	329.0	347.0	–	–
Prolific Life & Pensions Ltd				
Stramongate, Kendall, Cumbria LA9 4BE 0539 33733				
Managed Fund see Balanced Growth Managed Fund				
Life Funds				
Balanced Grth Mngd.	589.5	621.2	(z)	–
Adventurous Mngd.	125.9	132.7	(z)	–
Secure Mngd.	107.9	113.8	(z)	–

	Bid Price	Offer Price	+ or –	Yield Gross
Prudential Holborn Pensions Ltd – Contd.				
Communications	103.3	108.8	+0.8	–
Smaller Companies	106.4	112.0	+0.5	–
International Small Cos.	129.5	136.4	+0.4	–
Prudential Pensions Limited				
Holborn Bars, London EC1N 2NH 01-405 9222				
Discretionary May 31.	£154.66	160.01	–	–
Equity May 31	£168.56	174.69	–	–
International May 31	£26.16	26.93	–	–
Intl Bond May 31	£12.42	12.58	–	–
Fixed Int May 31	£71.86	72.82	–	–
Index Linked May 31	£60.28	61.03	–	–
Property May 31	£109.38	115.92	–	–
Cash May 31	£20.7872	20.7872	–	–
Pru-Linked Retirement Plan				
Managed May 31	383.2	399.2	–	–
Cash May 31	195.3	203.5	–	–
Prudential Pensions Investment Account				
Pens Mngd June 6	150.9	162.5	–0.2	–
Pens UK Eq June 6	294.5	317.9	–0.1	–
Pens Intl June 6	183.0	197.2	–1.2	–
Pens Fixed June 6	162.3	171.5	–0.2	–
Pens Index Lk June 6	150.8	159.3	–0.9	–
Pens Cash June 6	127.5	134.3	–	–
Regency Life Assurance Co Ltd				
Regency Hse, Lanark Sq, London E14 9XS 01-538 8800				
Aggressive Ptflio Fd	117.7	123.8	+0.1	–
Balanced Ptflio Fd	307.6	321.7	+0.1	–
Cautious Ptflio Fd	120.1	126.4	–0.1	–
Elite Fund	106.2	111.7	+0.5	–
European Fund	84.3	88.7	–0.1	–
Far East Fund	106.1	111.6	+1.1	–
Fixed Interest Fund	236.9	249.3	–0.8	–
International Fund	267.4	281.4	+0.3	–
Money Fund	176.3	185.5	–	–
N. American Fd	120.1	126.4	+1.1	–

MANAGEMENT SERVICES

OFFSHORE AND OVERSEAS

GUERNSEY (SIB RECOGNISED)

JERSEY (SIB RECOGNISED)

IoM (SIB RECOGNISED)

LUXEMBOURG (SIB RECOGNISED)

SWITZERLAND (SIB RECOGNISED)

JERSEY (**)

GUERNSEY (**)

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ISLE OF MAN (**)

LUXEMBOURG (**)

OFFSHORE INSURANCES

OTHER OFFSHORE FUNDS

LONDON SHARE SERVICE

BRITISH FUNDS

"Shorts" (Lives up to Five Years)

1989 High	1989 Low	Stock	Price £	+ or -	Yield Int.	Yield Red.
99½	98	Exch. 10pc 1989	99	+	10.05	13.41
99	98	Exch 11pc 1989	99	+	11.10	13.49
98	95⅝	Treas 5pc 1986–89	97	–	5.11	11.29
99½	98¼	Exch 10¼pcCv '89	98	+	10.31	11.42
101	99	Treas 13pc 1990‡‡	99	–	13.00	12.88
99	98	Exch 11pc 1990‡‡	98	+	11.15	13.05
101	99	Exch. 12½pc 1990	99¾	+	12.55	12.95
94	91	Treas. 3pc 1990	93¾	–	3.20	10.42
96	95⅝	Treas 8¼pc 1987–90‡‡	96	......	8.59	12.55
98	95	Treas. 8pc Cv 1990 ‡‡	95	+	8.37	12.36
98	96¼	Treas. 10pcCv 1990	97	+	10.31	12.42
91	87	Exch 2½pc 1990	90	–	2.76	9.52
101	99	Treas 11¾pc 1991	99½xd	+	11.82	12.19
92	89⅝	Funding 5¾pc '87–91‡‡	91	–	6.31	11.29
89	86	Treas. 3pc 1991	89	–	3.38	9.43
100	96	Treas 10pc Cv '91 ‡‡	96¼xd	–	10.39	12.11
101	97	Exch. 11pc 1991	98	+	11.20	11.86
94	91	Treas. 8pc 1991	91xd	+	8.70	11.80
106	102½	Treas 12¾pc 1992‡‡	102	+	12.40	11.47
99½	96⅛	Treas 10pc 1992	96½	+	10.37	11.54
94	91	Treas. 8pc 1992 ‡‡	91	+	8.74	11.53
100¼	97	Treas 10½pc Cv 1992‡‡	97	+	10.77	11.50
85	82¼	Treas. 3pc 1992	82¼xd	–	3.63	9.74
105	101	Exch. 12¼pc '92	101	+	12.02	11.50
109¼	105	Exch 13½pc 1992	105	+	12.79	11.39
94	90	Treas 8¼pc 1993	91	+	9.06	11.26
100	96¼	Treas 10pc 1993‡‡	96	+	10.36	11.10
108¼	104	Treas 12½pc 1993‡‡	104	......	12.01	11.23
87¼	84¼	Funding 6pc 1993‡‡	85½	–	7.01	10.24
113¼	108	Treas 13¾pc 1993‡‡	109	......	12.62	11.11
94¾	90¾	Treas. 8½pc 1994	90	+	9.39	11.15
117	112	Treas 14½pc 1994‡‡	112	+	12.84	10.91
113	108	Exch 13½pc 1994	108	+	12.43	11.15

Five to Fifteen Years

1989 High	1989 Low	Stock	Price £	+ or -	Yield Int.	Yield Red.
100¾	96	Treas. 10pc Ln. 1994‡‡	96xd	+	10.38	10.97
110¼	105	Exch. 12½pc 1994	105	+	11.87	11.13
96	92	Treas 9pc 1994‡‡	92	+	9.77	10.94
108	103	Treas 12pc 1995	103	......	11.59	11.14
79¾	74½	Exch 3pc Gas 90–95	76	......	3.95	8.21
101	96	Exch. 10¼pc 1995	96⅝	–	10.61	11.03
113	107	Treas 12¾pc 1995‡‡	108	+	11.80	10.96
119	113	Treas. 14pc '96	113	–	12.36	11.11
97½	92	Treas. 9pc 1992–96‡‡	92	+	9.77	10.66
126	119	Treas 15¼pc 1996‡‡	120	–	12.70	11.01
117	110	Exch 13¼pc 1996‡‡	110	–	11.98	11.01
101	95⅝	Conversion 10pc 1996	95½	......	10.47	10.88
118½	111	Treas 13¼pc 1997‡‡	111	......	11.88	10.96
104	97¼	Exch 10½pc 1997	97	+	10.72	10.89
95	89	Treas 8¾pc 1997‡‡	89½	+	9.78	10.69
128¾	121	Exch 15pc 1997	121½	......	12.39	11.07
100	94¼	Exch. 9¾pc 1998	94	–	10.34	10.77
84	79⅝	Treas 6¾pc 1995–98‡‡	79⅝	......	8.47	10.28
134	126½	Treas. 15½pc '98‡‡	126⅝	......	12.25	10.88
113	106½	Exch. 12pc 1998	106	+	11.25	10.83
100¾	94	Treas 9½pc 1999‡‡	94⅛	......	10.10	10.48
115¾	108⅛	Exch. 12¼pc 1999	108	+	11.28	10.80
105⅝	98	Treas. 10½pc 1999	98¾	+	10.64	10.71
104	97	Conversion 10¼pc 1999	97⅛	+	10.53	10.67
94	87	Treas. 8½pc Ln 2000‡‡	87	......	9.68	10.41
97	90	Conversion 9pc 2000‡‡	90	......	9.90	10.42
122	113	Treas. 13pc 2000	114	–	11.41	10.81
103⅝	96½	Treas 10pc 2001	96⅝	......	10.36	10.51
124	116¾	Treas. 14pc '98–01	116½	......	12.01	11.03
102	95	Conversion 9¾pc 2001	95¼	......	10.25	10.47
113	106¼	Exch. 12pc '99–02	106½	+	11.25	10.86
104	97¼	Conversion 10pc 2002	97⅝	–	10.28	10.38
102	95	Treas 9¾pc 2002	95¼	–	10.19	10.35
97	90	Exch. 9pc 2002	90¾	......	9.91	10.27
126	118¾	Treas. 13¾pc 2000–03	118½	–	11.61	10.85
105⅝	98	Treas 10pc 2003	98¼	–	10.20	10.25
113	105	Treas. 11½pc 2001–04	105½	......	10.89	10.64
106	98	Treas. 10pc 2004	98¾	......	10.14	10.18

BRITISH FUNDS—Contd

Over Fifteen Years

1989 High	1989 Low	Stock	Price £	+ or -	Yield Int.	Yield Red.
59¾	55⅝	Funding 3½pc '99–04	55⅝	–	6.21	8.76
102	95	Conversion 9½pc 2004	95⅝	+	9.97	10.11
103	95	Conversion 9½pc 2005	95⅝	+	9.95	10.07
111¼	103⅝	Exch. 10½pc 2005	103	–	10.14	10.04
125	116	Treas. 12½pc 2003–05	116	–	10.73	10.28
90⅝	83⅝	Treas. 8pc 2002–06‡‡	83	......	9.55	9.98
105¾	98	Conversion 9¾pc 2006	98⅛	–	9.94	9.97
118	110⅝	Treas. 11¾pc 2003–07	110⅝	......	10.63	10.29
96	88¾	Treas 8½pc 2007 ‡‡	89	......	9.57	9.83
134¾	124	Treas. 13½pc '04–08	124	–	10.82	10.20
101	93	Treas. 9pc 2008 ‡‡	93	–	9.64	9.76
92	84⅞	Treas 8pc 2009	85	–	9.41	9.69
102	94	Conv 9pc Ln 2011 ‡‡	94½xd	–	9.53	9.61
68⅝	63	Treas. 5½pc 2008–12‡‡	63	–	8.67	9.39
89¾	83	Treas. 7¾pc 2012–15‡‡	83	–	9.35	9.54
132	122¼	Exch. 12pc '13–'17	122½xd	–	9.81	9.61

Undated

1989 High	1989 Low	Stock	Price £	+ or -	Yield Int.	Yield Red.
45⅝	41	Consols 4pc	41	......	9.54	–
40¾	37	War Loan 3½pc‡‡	37	......	9.44	–
70	60⅝	Conv. 3½pc '61 Aft.	64⅛	......	5.41	–
41	31	Treas. 3pc '66 Aft.	33¾	......	8.86	–
30¼	26	Consols 2½pc	26xd	......	9.46	–
29½	26	Treas. 2½pc	26	......	9.55	–

Index-Linked

1989 High	1989 Low	Stock (b)	Price £	+ or -	(1)	(2)
129½	124	Treas 2pc IL '90(84.6)	129	+	–	4.77
107¾	103	Do. 2pc '92‡‡(97.8)	107	+	3.19	4.13
99	94	Do. 2 '94 (102.9)	98	+	3.44	3.97
146½	139⅛	Do. 2pc '96(67.9)	145¾	+	3.42	3.79
124	118	Do 2½pc '01(78.3)	122	+	3.67	3.92
122	115⅝	Do. 2½pc '03(78.8)	119⅝	+	3.72	3.94
125	117	Do. 2pc '06(69.5)	122⅝	+	3.70	3.88
117	110¼	Do. 2½pc '09(78.8)	114½	+	3.70	3.87
123	114	Do. 2½pc '11(74.6)	119	+	3.69	3.85
102	95⅛	Do. 2½pc '13(89.2)	98	+	3.69	3.83
110	101¼	Do. 2½pc '16(81.6)	106	+	3.64	3.78
108⅝	100¾	Do. 2½pc '20(83.0)	104½	+	3.58	3.71
91	84	Do. 2½pc '24‡‡(97.7)	87¾	+	3.56	3.67

Prospective real redemption rate on projected inflation of (1) 10% and (2) 5%. (b) Figures in parentheses show RPI base month for indexing, (ie 8 months prior to issue) and have been adjusted to reflect rebasing of RPI to 100 in January 1987. Conversion factor 3.945. RPI for September 1988: 108.4 and for April 1989: 114.3.

INT. BANK AND O'SEAS

1989 High	1989 Low	Stock	Price £	+ or -	Yield Int.	Yield Red.
108	100	African Dv Bk 11¼ Ln 2010	100½	+	11.07	11.06
104	97	Asian Dev Bk 10¼pcLn2009	97¼xd	+	10.54	10.57
130	120	Australia 13½pc 2010	120xd	+	11.20	10.98
113	103¾	Do. 11½pcLn2015	104xd	+	10.94	10.90
108	100	Euro Inv Bk 11pc Ln 2002	100	–	10.94	10.90
104	96⅛	Do. 10¼pc2004	96	+	10.70	10.77
119	110	Int-Am Dev Bk 12½pc 2003	110	+	11.33	11.01
99¼	91	Do. 9¾pcLn 2015	91	+	10.64	10.71
97½	94	Mlysia 10¾pcLn 2009	94	......	11.44	11.52
120	118	N.Z. Medicare 15½pc 2008	118	......	13.98	13.80

CORPORATION LOANS

1989 High	1989 Low	Stock	Price £	+ or -	Yield Int.	Yield Red.
102	100	Birmingham 13½pc 1989	100½xd	......	13.43	11.20
111½	102½	Do. 11½pc 2012	105½xd	......	10.90	10.85
91	86½	GLC 6¾pc 1990–92	86½xd	......	7.80	12.10
124½	114½	Leeds 13½pc 2006	120½xd	......	11.20	10.94
33	30	Liverpool 3½pc Irred.	30xd	......	11.67	–
94½	92	LCC 6¾pc '88–90	93½xd	......	7.22	12.90
30	28	Do. 3pc '20 Aft.	28xd	......	10.71	–
107½	104½	Manchester 11½pc 2007	105½xd	......	10.90	10.80

COMMONWEALTH & AFRICAN LOANS

1989 High	1989 Low	Stock	Price £	+ or -	Yield Int.	Yield Red.
89½	86½	NZ 7¼pc 1988–92	87¼	......	8.31	12.20
206	206	S Rhod 2½pc Non-Assd.	206	......	–	–
84½	84½	Do. 4½pc 87–92 Assd.	84½xd	......	5.33	9.33

LOANS

Building Societies

1989 High	1989 Low	Stock	Price £	+ or -	Yield Int.	Yield Red.
99¼	98	N'wide Anglia 9½ 26.6.89	99¼	......	9.84	14.27
99	98⅝	Do. 10½pc 17.7.89	99	......	10.73	14.33
99	98	Do. 11pc 7.8.89	99	......	11.15	14.13
99	98	Do. 11pc 29.8.89	99	......	11.64	14.21
99	99	Do. 12⅛pc 18.9.89	99	......	12.46	14.28
99	99	Do. 12pc 2.10.89	99¼	......	12.41	14.22
99	98	Do. 11pc 6.11.89	98xd	......	11.94	14.28
100	98	Do. 12pc 4.12.89	99	......	12.40	14.25
100	99	Do. 12pc 2.1.90	99xd	......	12.90	14.24
100	98⅝	Do. 12pc 29.1.90	98	......	12.70	14.24
100	98¼	Do. 12pc 26.2.90	98	......	12.83	14.20
102¼	99	Do. 3⅞pcIL Ln 2021	99xd	–½	4.38	4.45

Public Board and Ind.

1989 High	1989 Low	Stock	Price £	+ or -	Yield Int.	Yield Red.
99	95	Agric. Mt. 5pc '59–89	99xd	......	5.05	–
47	45	Met. Wtr. 3pc 'B'	46xd	......	6.52	10.41

FOREIGN BONDS & RAILS

1989 High	1989 Low	Stock	Price £	+ or -	Div % Gross	Red. Yield
45	40	Greek 7pc Ass.	45	......	3.50	f8.75
45	40	Do. 6pc 28 Stb. Ass.	40xd	......	3	f7.50
45	40	Do 4pc Mixed Ass.	40xd	......	2	f5.00
80	65	Hung. '24 Ass.	80	......	2.75	f3.57
139	129	Hydro Quebec 15pc 2011	129	+	15.00	11.31
128	119	Iceland 14½pc Ln 2016	119xd	+	14.50	12.00
97¼	92½	Ireland 9¾pc '91–96	92½xd	–	9.75	11.20

AMERICANS

1989 High	1989 Low	Stock	Price £	+ or -	Div Gross	C'vr	Y'ld Gr's
38½	26¼	Abbott Laboratories‡	38½xd	+	$1.20	–	2.0
537p	361p	♦Allegheny & W 1c	527p	+2	30c	–	3.6
16	12	Amax $1	16½xd	+	40c	–	1.5
11½	6	Ambase Corp $1	8⅝xd	+	20c	–	1.5
14½	956p	Amdahl 5c	14¼xd	+	h10c	–	0.4
35¾	25½	Amer. Cyanamid $5	35½	+	$1.35	–	2.4
22	14	Amer. Express 60c	21½xd	+	84c	–	2.5
14	854p	Amer. Medical Int. $1	14	+½	♦72c	–	3.3
22¾	15¼	American T. & T. $1	22⅝	......	$1.20	–	3.4
38½	26	Ameritech $1	38¼	......	h$2.92	–	4.8
18½	9⅝	BankAmerica $1 ‡	18xd	......	60c	–	2.1
30	19¼	Bankers N.Y. $1	30xd	+	$2.08	–	4.3
56½	38½	Bell Atlantic $1	56½	+	$4.08	–	4.6
31⅝	19⅝	BellSouth Corp.	31⅝	+	$2.52	–	5.0
15¾	12⅝	♦Bethlehem Steel $8	14xd	+	–	–	–
11¼	929p	♦Bio-Rad Labs. A	11¼	+	–	–	–
20¼	15¼	Bowater Inc.	18¾xd	+	$1.12	–	3.8
12¾	9¼	Brunswick 75c	11⅝	–	44c	–	2.4
37¾	28¼	CPC Intnl. 25c	37⅝	+	$1.60	–	2.7
21¼	17⅝	CSX $1	20⅞	+	$1.24	–	3.8
798p	333p	California Engy.	730p	+13	–	–	–
28⅝	17¼	Campbell Soup 15c	28⅝	+	92c	–	2.0
25	15	Chase Manhattan $12½	25xd	+½	$2.36	–	6.0
23½	17	Chem. Banking Corpn.	23½	+	$2.72	–	7.3
16¼	13¾	Chrysler $6¼	15¼xd	+	$1.20	–	5.0
21¼	14	Chicorp $1	21xd	–	$1.62	–	4.9
230p	152p	CityFed Fin. Corp.	160p	–5	4c	–	1.6
32	25¼	Colgate-Palmolive $1	32¼	+	s$1.48	–	2.9
21½	16¾	Cons Freightways 62½c	20½	+	98c	–	3.1
16⅝	10¼	Cont'l Bank Corp $4	16⅝xd	+	86c	–	3.1
387½p	300p	♦Corporate Data Scncs.	334p	......	–	–	–

Continued on next page

Henderson Global Strategy Mngmt SA

	Bid Price	Offer Price	+ or -	Yield Gross
Henderson Global Strategy Fund				
North Am Portfolio	£0.91	0.96	–0.01	–
European Portfolio	£1.28	1.35	----	–
UK Growth Portfolio	£0.97	1.02	----	–
Japan Portfolio	£1.31	1.38	----	–
Pacific Portfolio	£1.15	1.21	----	–
Managed Intl Portfolio	£0.94	0.99	----	–
Dollar Cash Portfolio	$0.9782	0.9782	+0.0002	–
Sterling Csh Portfolio	£1.1062	1.1062	+0.0004	–

Hill Samuel Investment Services Intl (z)

NM Income & Gwth Fd

	Bid Price	Offer Price	+ or -	Yield Gross
NAV June 5		$15.51	----	–

NM Schroder Financial Mngt Intl Ltd

	Bid Price	Offer Price	+ or -	Yield Gross
NM Hong Kong Fd	HK$16.59	17.69	+0.307	5.28
Int Residentl Prop Fd	£1.036	1.107	–	4.00

National Mutual Insce Co (Bermuda) Ltd

	Bid Price	Offer Price	+ or -	Yield Gross
Nm Intl Mngd Fund	$13.57	14.44	----	–

The New Zealand Fund

Manager: Leadenhall Offshore Ltd

	Bid Price	Offer Price	+ or -	Yield Gross
The NZ Fund	$7.95	8.51	----	–

Standifund

Skandinaviska Enskilda Banken

	Bid Price	Offer Price	+ or -	Yield Gross
Equity Int. Acc.	$10.51	11.04	----	–
Equity Int. Inc.	$9.82	10.33	----	–
Equity Global	$0.96	1.02	----	–
Far East	$1.74	1.84	----	–
Equity Gold	$0.81	0.86	----	–
Equity Japan Acc.	Y121	127	----	–
Equity Nordic	$1.07	1.13	----	–
Equity UK	£1.09	1.15	----	–
Equity Contl Europe	$0.97	1.03	----	–
Equity Mediterranean	$1.00	1.06	----	–
Equity North America	$1.09	1.16	----	–

The Charities Deposit Fund

2 Fore Street, London EC2Y 5AQ 01-588 1815

	Gross	Net	CAR	Int. Crd
Deposit	13.00	–	13.65	3-Mth

Gartmore Money Management Ltd

2-3 White Hart Yard, London SE1R 1NX 01-236 1425

	Gross	Net	CAR	Int. Crd
Call Fund	12.80	10.02	13.69	6-Mth
7-day Fund	13.11	10.26	14.02	6-Mth
Special Fund	12.97	–	13.77	Mth
Dollar	8.44	6.60	9.03	3-Mth

Money Market Bank Accounts

Money Market Trust Funds

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AMERICANS—Contd

1989 High	Low	Stock	Price £	+ or –	Div Gross	C'vr	Y'ld Gr's
463p	278p	Cullinet Sftwr 1c	463p	.....	–	–	–
27¼	21¾	Dana Corp. $1	26¼xd	+¼	$1.60	–	3.9
11⅝	854p	Data General	11¼	.....	–	–	–
36½	28⅛	Dun & Bradstreet $1	36½	+⅞	$2.00	–	3.5
40⅝	30½	Eaton Corpn. 50c	40½xd	+¼	h$2.00	–	3.1
11⅛	8⅞	Echlin Inc.	11⅞xd	+⅛	70c	–	4.0
20¼	16⅞	FPL Group 1c	19⅝xd	+⅛	$2.20	–	7.1
32⅛	27⅝	Ford Motor $2	31⅝	+⅞	$3.00	–	6.0
42⅞	30¾	GATX 62½c	42¾	–⅜	$2.00	–	3.0
35¼	24¾	Gen. Elect. 63c	35¼xd	+⅛	$1.64	–	3.0
567p	484p	General Host Corp $1	559p	+18	30c	–	3.4
39⅛	18¼	Gillette $1	26¾	+⅞	96c	–	2.3
847p	616p	Gt Am First Svgs Bk $1	847p	+47	60c	–	4.5
21⅞	16⅞	Greyhound $1½	21½xd	.....	$1.32	–	3.9
13⅝	847p	Hasbro Inc 50c	13⅝	.....	16c	–	0.7
		For Home Group see Ambase Corp					
49¼	32⅞	Honeywell $1½	47xd	.....	$2.10	–	2.8
18⅞	15¼	Houston Inds.	18¼	+⅛	$2.96	–	10.0
74⅝	63¾	IBM Corpn $1¼	69½xd	+¼	$4.84	–	4.4
52p	45p	Image Storage/R.Sys.1c	45p	.....	–	–	–
27⅞	18¼	Ingersoll-Rand $2	27⅞xd	+1	$1.04	–	2.4
31	22½	Lockheed Crpn. $1	31xd	+⅛	$1.60	–	3.3
20¼	15¾	Lone Star Inds $1	20¼xd	+1⅛	$1.90	–	5.9
24⅞	17½	Louisiana Land 15c	24¼xd	+⅛	$1.00	–	2.6
16¼	11½	Lowe's 50c	16¼	+⅛	48c	–	1.9
23¾	15¾	Manuf. Hanover $1	23¼	–⅞	$3.28	–	8.9
19½	13¾	Merrill Lynch $1	19½	.....	$1.00	–	3.2
2253p	1910p	Molex Inc	2048p	+2	3.2c	–	–
26¼	18¼	Morgan (JP) $2½	26¼xd	+¼	$1.66	–	3.9
50⅝	36¾	NYNEX $1	50⅝	+¼	$4.36	–	5.4
23⅝	18¼	PHH Corp.	23⅝	+¼	$1.12	–	3.0
253p	220p	Pacific Agr.	253p	.....	–	–	–
25	19	Pacificorp $3¼	24⅝	+⅛	$2.76	–	6.8
26¼	16⅞	Pacific Telesis 10c	25⅝	+⅛	$1.88	–	4.6
20⅞	15¼	Pall Corp. 25c	20½	+⅛	48c	–	1.5
53¾	39¾	Pennzoil $3 1/3c	51¾xd	+1⅜	$3.00	–	3.7
25¼	17¾	Premark Intl	25¼	+⅝	60c	–	1.5
38⅝	28⅛	Quaker Oats $5	38⅝xd	+1	$1.20	–	2.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CANADIANS

[illegible]

BANKS, HP & LEASING

[illegible]

Hire Purchase, Leasing, etc.

[illegible]

BEERS, WINES & SPIRITS

[illegible]

BUILDING, TIMBER, ROADS

[illegible]

BUILDING, TIMBER, ROADS—Contd

[illegible]

CHEMICALS, PLASTICS

[illegible]

DRAPERY AND STORES

[illegible]

DRAPERY AND STORES—Contd

[illegible]

ELECTRICALS

[illegible]

ENGINEERING

[illegible]

FOOD, GROCERIES, ETC

[illegible]

HOTELS AND CATERERS

[illegible]

INDUSTRIALS (Miscel.)

[illegible]

INDUSTRIALS (Miscel.)—Contd

[illegible]

INDUSTRIALS (Miscel.)—Contd

[illegible]

INSURANCES

[illegible]

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INSURANCES—Contd

1989 High	Low	Stock	Price	+ or –	Div Net	C'vr	Y'ld Gr's	P/E
1029	853	Sun Life 5p	913	–5	38.69	–	5.7	–
£71⅛	£55⅛	Taisho M EDR	£58⅝	+1⅛	Q10%	–	0.8	–
£25⅞	£16⅛	Torchmark $1.00	£25⅜	+⅜	Q$1.28	–	2.5	–
713	559	Trade Indemnity	708	.....	7.0	–	1.3	–
£26⅞	£19	Travelers $1.25	£26½	+⅝	$2.40	–	5.8	–
£20⅞	£15⅜	USF & G Corp $2.50	£20⅜	+⅛	Q$2.80	–	8.5	–
£28⅝	£18⅞	USLIFE Corp. $1.0	£27⅛	+⅛	Q$1.40	–	3.2	–
793	505	Wind Friendly 8 10p	763	.....	31.25	2.4	5.5	8.9
265	214	Willis Faber 12½p	229	+1	11.46	1.2	6.7	16.7
48	41	Windsor 10p	45	–1	–	–	–	84.3

LEISURE

1989 High	Low	Stock	Price	+ or –	Div Net	C'vr	Y'ld Gr's	P/E
10	7	A & M Group 10p	7	.....	–	–	–	–
£87½	£77½	Do. 10pc Cv Uns. Ln 1998	£77½	.....	10%	–	17.2	–
170	143	Airtours 10p	164	.....	6.25	2.7	5.1	9.7
308	195	Anglia TV	275	–3	7.75	3.1	3.8	11.6
150	113	Aresco 1p	149	.....	0.75	7.8	0.7	25.3
34	25	BCE Hldgs 5p	26	.....	d1.0	0.9	5.1	29.0
355	275	Barr & W.A.T. 'A'	355	.....	15.0	1.7	5.6	14.3
22	14	Bond Media	15	.....	Q2c	–	6.4	–
505	229	Boosey & Hawkes	505	.....	10.0	♦	2.7	♦
54	35	Border T.V.	48	.....	†1.7	2.5	4.7	11.3
403	317	Brent Walker 10p	385	.....	11.0	♦	3.8	♦
117	87	Do 6pc.Cv.Cm.Rd.Pf	106	+1	6.0	–	7.5	–
344	245	Campari Int. 20p	278	+3	8.5	3.9	4.1	7.2
878	504	Capital Radio 10p	817	–1	†10.0	3.6	1.6	22.5
912	662	Carlton Communics.	848	+4	†7.5	5.2	1.2	22.9
418	268	Castle Commns. 5p	415	.....	†7.2	2.1	2.3	24.9
780	579	Central ITV	776	.....	25.5	2.5	4.4	11.6
248	126	Chrysalis	199	–1	±3.43	0.1	2.3	–
194	101	Cityvision 5p	185	+4	1.0	6.8	0.7	23.0
38	17	Classic Tr'bests h0.28	29	+1	–	–	–	–
368	258	Compass Group 5p	356	.....	†17.2	2.7	2.7	18.2
100½	69½	European Leisure	99	–1	†Q0.62%	29.9	0.1	37.0
*113	95	Expeller Lds. 20p	108	–1	–	–	–	29.5
663	437	Fairline Boats 10p	605	.....	†13.5	5.0	3.0	8.8
205	149	First Leisure	199	.....	2.93	3.3	2.0	20.1

[illegible]

MOTORS, AIRCRAFT TRADES

[illegible]

Commercial Vehicles

[illegible]

Components

[illegible]

Garages and Distributors

[illegible]

NEWSPAPERS, PUBLISHERS

[illegible]

PAPER, PRINTING, ADVERTISING

[illegible]

PAPER, PRINTING, ADVERTISING — Contd

[illegible]

PROPERTY

[illegible]

SHIPPING

[illegible]

SHOES AND LEATHER

[illegible]

SOUTH AFRICANS

[illegible]

TEXTILES

[illegible]

TOBACCOS

[illegible]

TRUSTS, FINANCE, LAND

Investment Trusts

[illegible]

TRUSTS, FINANCE, LAND—Contd

[illegible]

Finance, Land, etc

[illegible]

OIL AND GAS

[illegible]

OIL AND GAS—Contd

[illegible]

OVERSEAS TRADERS

[illegible]

PLANTATIONS

Rubbers, Palm Oil

[illegible]

Teas

[illegible]

MINES

Central Rand

[illegible]

Eastern Rand

[illegible]

Far West Rand

[illegible]

O.F.S.

[illegible]

Diamond and Platinum

[illegible]

Central African

[illegible]

Finance

[illegible]

Australians

[illegible]

MINES—Contd

1989 High	Low	Stock	Price	+ or –	Div Net	C'vr	Y'ld Gr's
120	89	Whim Creek 10c	113	+3	♦	–	–

Tins

1989 High	Low	Stock	Price	+ or –	Div Net	C'vr	Y'ld Gr's
45	35	Ayer Hitam SM1	45	.....	Q53.3c	0.7	‡
75	38	Gopeng Berhad M$0.50	75	.....	Q10c	2.0	2.9
615	83	Jantar 12½p	130	.....	♦	–	–
84	47	Malaysia Mng. 10c	77	.....	Q5c	4.0	1.5

[illegible]

Miscellaneous

[illegible]

THIRD MARKET

[illegible]

NOTES

Stock Exchange dealing classifications are indicated to the right of security names: α Alpha, β Beta, γ Gamma.

Unless otherwise indicated, prices and net dividends are in pence and denominations are 25p. Estimated price/earnings ratios and covers are based on latest annual reports and accounts and, where possible, are updated on half-yearly figures. P/Es are calculated on "net" distribution basis, earnings per share being computed on profit after taxation and unrelieved ACT where applicable; bracketed figures indicate 10 per cent or more difference if calculated on "nil" distribution. Covers are based on "maximum" distribution; this compares gross dividend costs to profit after taxation, excluding exceptional profits/losses but including estimated extent of offsettable ACT. Yields are based on middle prices, are gross, adjusted to ACT of 25 per cent and allow for value of declared distribution and rights.

● "Tap Stock"
* Highs and lows marked thus have been adjusted to allow for rights issues for cash
† Interim since increased or resumed
‡ Interim since reduced, passed or deferred
‡‡ Tax-free to non-residents on application
♦ Figures or report awaited
♥ Not officially UK listed; dealings permitted under rule 535(4)(a)
♦ USM; not listed on Stock Exchange and company not subjected to same degree of regulation as listed securities.
‡‡ Not officially listed.
# Price at time of suspension
¶ Indicated dividend after pending scrip and/or rights issue; cover relates to previous dividend or forecast.
♦ Merger bid or reorganisation in progress
♦ Not comparable
♦ Same interim; reduced final and/or reduced earnings indicated
§ Forecast dividend; cover on earnings updated by latest interim statement.
‡ Cover allows for conversion of shares not now ranking for dividends or ranking only for restricted dividend.
☆ Cover does not allow for shares which may also rank for dividend at a future date. No P/E usually provided.
■ No par value

B.Fr. Belgian Francs. Fr. French Francs §§ Yield based on assumption Treasury Bill Rate stays unchanged until maturity of stock. a Annualised dividend. b Figures based on prospectus or other offer estimate. c Cents. d Dividend rate paid or payable on part of capital, cover based on dividend on full capital. e Redemption yield. f Flat yield. g Assumed dividend and yield. h Assumed dividend and yield after scrip issue. j Payment from capital sources. k Kenya. m Interim higher than previous total. n Rights issue pending q Earnings based on preliminary figures. s Dividend and yield exclude a special payment. t Indicated dividend: cover relates to previous dividend, P/E ratio based on latest annual earnings. u Forecast, or estimated annualised dividend rate, cover based on previous year's earnings. v Subject to local tax. x Dividend cover in excess of 100 times. y Dividend and yield based on merger terms. z Dividend and yield include a special payment: Cover does not apply to special payment. A Net dividend and yield. B Preference dividend passed or deferred. C Canadian. E Minimum tender price. F Dividend and yield based on prospectus or other official estimates for 1988-89. G Assumed dividend and yield after pending scrip and/or rights issue. H Dividend and yield based on prospectus or other official estimates for 1989. K Dividend and yield based on prospectus or other official estimates for 1987-88. L Estimated annualised dividend, cover and P/E based on latest annual earnings. M Dividend and yield based on prospectus or other official estimates for 1988. N Dividend and yield based on prospectus or other official estimates for 1989-90. P Figures based on prospectus or other official estimates for 1987. Q Gross. R Forecast annualised dividend, cover and p/e based on prospectus or other official estimates. T Figures assumed. W Pro forma figures. Z Dividend total to date. Abbreviations: xd ex dividend; xc ex scrip issue; xr ex rights; xa ex all; xi ex capital distribution.

REGIONAL & IRISH STOCKS

The following is a selection of Regional and Irish stocks, the latter being quoted in Irish currency.

Stock	Price	+ or –
Albany Inv 20p	98	–1
Craig & Rose £1	728	.....
Finlay Pkg. 5p	88	.....
Holt (Jos) 25p	1333	.....

IRISH

Stock	Price	+ or –
Cap. 8½% Ln. 1991	£98	.....
9pc Cap Ln. 1996	£97½	+¼
Fin. 13% 97/02	£118	.....
Arnotts	448	.....
Carrol (P.J.)	152	.....
Hall (R. & H.)	168	.....
Helton Hldgs.	74	+1
Irish Ropes	203	.....
United Drug	138	.....

TRADITIONAL OPTIONS

3-month call rates

Industrials	p
Allied-Lyons	38
Amstrad	11
BAT	45
BOC Grp.	42
BSR	6½
BTR	32
Barclays	42
Beecham	50
Blue Circle	48
Boots	25
Bowaters	44
Brit Aerospace	52
British Steel	7½
Brit. Telecom	21
Burton Ord.	18
Cadburys	31
Charter Cons	48
Comm Union	32
Courtaulds	30
FKI Babcock	14
FNFC	22
Gen Accident	85
GEC	20
Glaxo	110
Grand Met	45
GUS 'A'	90
Guardian	18
GKN	34
Hanson	16
Hawker Sidd.	60
ICI	100
Jaguar	28
Ladbroke	48
Legal & Gen	26
Lex Service	33
Lloyds Bank	29
Lucas Inds.	58
Marks & Spencer	15
Midland Bk.	30
Morgan Grenfell	24
Nat West Bk.	52
P & O Dfd.	55
Plessey	22
Polly Peck	26
Racal Elect.	40
RHM	42
Rank Org Ord.	80
Reed Intnl.	34
STC	32
Sears	10
TI	38
TSB	10
Tesco	14
Thorn EMI	58
Trust Houses	24
T&N	18
Unilever	46
Vickers	18
Wellcome	42

Property

Brit Land	32
Land Securities	52
MEPC	50
Randsworth	28

Oils

Brit Petroleum	21
Burmah Oil	50
Calor	35
Charterhall	2½
Premier	9
Shell	32
Ultramar	26

Mines

Cons Gold	100
Lonrho	30
RTZ	40

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CURRENCIES, MONEY AND CAPITAL MARKETS

FOREIGN EXCHANGES

Dollar retains firm undertone

THE DOLLAR failed to break through resistance at DM1.9940 in currency markets yesterday and fell back to finish in the middle of the day's narrow range. But it was still up from overnight levels, underpinned by its status as a safe haven for investors while the unrest in China continues.

The US unit opened at DM1.9930 - which proved to be the day's high - as investors sought to cover positions in anticipation of a break through the DM2.00 level. But demand for the dollar was relatively modest in comparison with the buying seen on Monday. Nevertheless, there seems to be little chance of the dollar moving much lower while the tension in China remains.

The cut in US prime rates on Monday has so far failed to have much of an impact on the dollar. Investors are awaiting firm evidence after indications that the US Federal Reserve may have relaxed its monetary stance, and many may prefer to wait until Friday and the release on US producer prices for May. Most forecasters are looking for a rise of 0.5 per cent to give a year-on-year rise of just under six per cent.

Early trading in New York saw the dollar lose ground on reports that the Fed had been selling dollars for yen and D-Marks, but it soon recovered from its earlier lows. In London, the US unit closed at DM1.9770 against DM1.9625 and Y142.90 compared with Y141.85. Elsewhere, it finished at SFr1.7140 from SFr1.6955 and FFr6.7225 against FFr6.6650. On Bank of England figures, the dollar's exchange rate index rose from 71.5 to 72.2.

Sterling ended on a steadier note, having fluctuated sharply during the morning. Investors expected a renewed assault on the DM3.10 level, with sterling sentiment remaining extremely depressed. But its early fall was mainly a dollar movement, and by mid-morning the pound was showing a modest improvement against its European partners.

Traders remain cautious despite the steadier tone and sterling's fragile recovery could be compromised by a poor reaction to the economic debate due to take place in the House of Commons today. Investors will be looking for renewed signs of the Government's determination to bear down on inflation at a time when overseas holders of sterling are worrying about the course of UK economic policy.

The pound's exchange rate index finished unchanged from Monday's at 92.1, having opened at 91.9. Against the dollar, sterling fell to $1.5695 from $1.5815, but it was unchanged in D-Mark terms at DM3.1025. It was slightly weaker against the yen at Y224.25 from Y224.50 and finished elsewhere at SFr2.6900 from SFr2.6825 and FFr10.5500 compared with FFr10.5400.

The Spanish peseta showed a muted reaction to the announcement that it is to join the exchange rate mechanism of the European Monetary System before July 1990. The Spanish authorities are seeking a wider fluctuation band than the normal 2.25 per cent and will probably settle for the 6 per cent applied to the Italian lira. The US dollar was fixed at Pta129.066 in Madrid, up from Pta124.65 at the close in London on Monday, and the Bank of Spain sold a nominal $19.9m at the fixing.

£ IN NEW YORK

June 6	Latest	Previous Close
£ Spot	1.5660-1.5670	1.5665-1.5675
1 month	0.56-0.55pm	0.56-0.54pm
3 months	1.78-1.76pm	1.82-1.79pm
12 months	6.70-6.60pm	6.72-6.62pm

Forward premiums and discounts apply to the US dollar

EMS EUROPEAN CURRENCY UNIT RATES

	Ecu central rates	Currency amounts against Ecu June 6	% change from central rate	% change adjusted for divergence	Divergence limit %
Belgian Franc	42.4582	43.4507	+2.34	+0.94	±1.5344
Danish Krone	7.85212	8.07862	+2.88	+1.48	±1.5404
German D-Mark	2.05853	2.07405	+0.75	-0.66	±1.0981
French Franc	6.90403	7.04707	+2.07	+0.67	±1.3674
Dutch Guilder	2.31943	2.33681	+0.75	-0.65	±1.5012
Irish Punt	0.768411	0.775871	+0.97	-0.43	±1.6684
Italian Lira	1483.58	1507.40	+1.61	+0.85	±4.0752

Changes are for Ecu, therefore positive change denotes a weak currency. Adjustment calculated by Financial Times.

FINANCIAL FUTURES

Prices recover after weak start

SHORT STERLING futures recovered from a sharply weaker start in Liffe trading yesterday to finish two ticks up from Monday's close. Values were marked down initially in anticipation of another sterling slide, but as the pound showed signs of steadying so prices recovered. From an opening level of 85.85, the September contract moved up to touch a best level of 86.00. It closed at 85.97 compared with 85.95 previously. Trading volume was again brisk with over 31,000 lots changing hands.

Long gilt futures recorded around half the volume seen in short sterling, and ended on a slightly weaker note. Investors continue to show their concern about sterling's vulnerability, and the September price slipped to 92-19 from 92-22 on Monday.

West German bond futures opened 17 ticks down in the September contract on fears that the dollar would break through DM2.00. But the US unit stayed below this psychologicaly important level, enabling values to recover from the weaker start to finish unchanged from Monday's close.

US Treasury bonds traded quietly and finished on a slightly softer note. However, values were marked up later in US trading as short term interest rates were allowed to decline.

MONEY MARKETS

Steady but nervous

UK RATES retreated from a firmer start in London yesterday as sterling finished on a steady note. Three-month interbank money was marked up to 14¼-14⅛ per cent at the outset, with many traders expecting a further run on the pound after its break below DM3.10 on Monday.

However, sterling finished virtually unchanged on the day, and three-month money came back to close at 14⅛-14 per cent, the same as Monday's close.

UK clearing bank base lending rate 14 per cent from May 24

The Bank of England forecast a flat liquidity position. Factors affecting the market included bills maturing in official hands and a take up of Treasury bills, together with repayment of any late assistance draining £258m. In addition, banks brought forward balances £120m below target. These were offset by Exchequer transactions which added £290m, and a fall in the note circulation of £75m. The forecast was revised to a shortage of around £100m, but the Bank gave no assistance in the ...

Some traders have taken this as a signal that the Fed is easing its monetary policy, while others remain cautious.

In Frankfurt, the Bundesbank announced its intention to hold a sale and repurchase tender with no minimum bid. Successful applicants for the 35-day facility receive their allocations today, coinciding with a maturing agreement which will drain DM12.1bn from the system.

Short term interest rates remained firm as commercial banks sought funds to meet a large tax payment deadline. Call money was quoted at 6.50 per cent, the same as the Lombard rate. Commercial banks continue to borrow heavily through their Lombard facility; over DM2.5bn was borrowed on Monday following loans of DM2.9bn on Friday. The Bundesbank is expected to make conditions easier by allocating more than the maturing repurchase agreement takes out.

In Zurich, the Swiss National Bank set the Lombard rate at 7½ per cent from 8¼ per cent on Monday. The rate has now been reduced from a peak of 9½ per cent on Friday and follows a half point reduction in time deposit rates announced ...

I.G INDEX LTD, 9-11 GROSVENOR GARDENS, LONDON SW1W 0BD
Tel: 01-828 7233/5699 An AFBD member Reuters Code: IGIN, IGIO

FT 30	FTSE 100	WALL STREET
Jun. 1755/1764 +27	Jun. 2111/2121 +32	Jun. 2496/2508 +16
Sep. 1792/1801 +25	Sep. 2155/2165 +30	Sep. 2530/2542 +16

Prices taken at 5pm and change is from previous close at 9pm

JOTTER PAD

CROSSWORD

No.6,953 Set by GRIFFIN

ACROSS

1 Back row put in a different order (9)
6 Iron cupboard (5)
9 One reckoning to retire with 100 to score (5)
10 Badly trained mum admitted being dull (9)
11 Are about to ring Naples, perhaps; they fly there (10)
12 Lady teacher, first person to retire (4)
14 Preacher you can make a monkey out of? (7)
15 Twister split before the fuss (7)
17 Prayers for a Scotsman the Spanish imprisoned (7)
19 Sees bid is ridiculous, moreover (7)
20 No approval for retreat (4)
22 A person with lots to sell (10)
25 Is not backing Heather's entry for a London borough (9)
26 Lies about the streets (5)
27 Bring some beef, etc., however expensive (5)
28 In a cathedral city ten called agitatedly (9)

4 Stupid man can't use switch (7)
5 Serious love leaves one in tears, trembling (7)
6 Taking one into one's home was profitable (4)
7 Number three is wrong (5)
8 Team displays seen at fairs (9)
13 Noble actor is playing with a rodent (10)
14 He has a suit to press (9)
16 Groom entered, dead drunk, when spoken to (9)
18 Give up writing odd clues about races (7)
19 Relating to plants taken round to cabin (7)
21 A little hooter (5)
23 Dangerous kris wielded by youth leader (5)
24 Creep home before church (4)

Solution to Puzzle No.6,952

WORLD STOCK MARKETS

AUSTRIA · BELGIUM/LUXEMBOURG · DENMARK · FINLAND · FRANCE · GERMANY · ITALY · NETHERLANDS · NORWAY · SPAIN · SWEDEN · SWITZERLAND · SOUTH AFRICA · JAPAN · AUSTRALIA · HONG KONG · SINGAPORE

[illegible]

CANADA

TORONTO
4pm prices June 6

[illegible]

MONTREAL
4pm prices June 6

Sales	Stock	High	Low	Close	Chng
48853	BombrdrB	$13¼	12⅞	13	
500	CB Pak	$18⅞	18⅞	18⅞	− ⅛
5230	Cascades	$08¼	08¼	08⅛	+ ⅛
7785	DomTxtA	$15	14⅞	14⅞	− ⅛
4100	Memotec	$10	09⅞	09⅞	− ⅛
148565	NatBk Cda	$14⅛	13⅞	14	⅛ ⅛
8867	Noverco	$12½	12⅛	12⅛	− ⅛
44441	Power Corp	$15⅞	15⅛	15⅞	+ ⅛
31647	Provigo	$10⅞	10	10⅞	+ ⅞
775	SteinbrgA	$40⅝	40½	40½	+ ⅛
37536	Videotron	$19¼	18⅞	18⅞	− ⅛

Total Sales 8,255,784 shares.

INDICES

NEW YORK — DOW JONES

	June 6	June 5	June 2	June 1	1989 High	1989 Low	Since compilation High	Since compilation Low
♦Industrials	2496.32	2480.70	2517.83	2490.63	2517.83 (2/6)	2144.64 (3/1)	2722.42 (25/8/87)	41.22 (2/7/32)
Home Bonds	91.68	91.44	91.12	90.75	91.68 (6/6)	87.35 (23/3)	–	–
Transport	1141.33	1146.02	1158.31	1156.53	1165.59 (26/5)	959.95 (3/1)	1165.59 (26/5/89)	12.32 (8/7/32)
Utilities	204.78	203.12	203.47	201.70	204.78 (6/6)	181.84 (24/2)	227.83 (22/1/87)	10.50 (8/4/32)

♦Day's High 2507.54 (2523.71) Low 2471.32 (2476.84)

STANDARD AND POOR'S	June 6	June 5	June 2	June 1	1989 High	1989 Low	Since compilation High	Since compilation Low
Composite‡	324.24	322.05	325.52	321.97	325.52 (2/6)	275.31 (3/1)	336.77 (25/8/87)	4.40 (1/6/32)
Industrial (latest)	371.10	368.52	372.99	369.46	372.99 (2/6)	318.66 (3/1)	393.17 (25/8/87)	3.62 (21/6/32)
Financial	30.93	30.75	30.91	30.31	30.93 (6/6)	24.30 (3/1)	32.43 (25/8/87)	8.64 (1/10/74)
NYSE Composite	180.93	179.89	181.49	179.63	181.49 (2/6)	154.98 (3/1)	187.99 (25/8/87)	4.46 (25/4/42)
Amex Mkt. Value	360.84	359.58	360.47	358.09	360.84 (6/6)	305.24 (3/1)	365.01 (13/8/87)	29.31 (9/12/72)
NASDAQ OTC Comp	447.96	447.84	451.63	448.32	451.63 (2/6)	378.56 (3/1)	465.28 (26/8/87)	54.87 (31/10/72)

	Jun 2	May 26	May 19	year ago (approx.)
Dow Industrial Div. Yield	3.51	3.38	3.35	3.58
	May 31	May 24	May 17	year ago (approx.)
S & P Industrial div. yield	3.02	3.03	3.04	2.94
S & P Indl. P/E ratio	13.53	13.46	13.42	15.35

TRADING ACTIVITY † Volume Millions

	June 6	June 5	June 2
New York	188.546	163.420	230.498
Amex	13.366	12.250	15.864
OTC	(u)	137.726	163.796

NEW YORK	June 6	June 5	June 2
Issues Traded	1993	1981	2001
Rises	941	600	1115
Falls	564	933	422
Unchanged	488	448	464
New Highs	176	205	293
New Lows	20	16	16

CANADA
TORONTO

	June 6	June 5	June 2	June 1	1989 High	1989 Low
Metals & Minerals	3411.5	3421.8	3436.0	3385.8	3564.9 (6/2)	3207.5 (3/1)
Composite	3757.2	3722.1	3730.1	3719.0	3757.2 (6/6)	3350.5 (6/1)
MONTREAL Portfolio	1916.31	1901.56	1908.01	1901.88	1916.31 (6/6)	1677.48 (3/1)

NEW YORK ACTIVE STOCKS

Tuesday	Stocks traded	Closing price	Change on day
C N W Corp	2,989,700	47½	+ ¾
BankAmerica	1,962,700	27¾	− 1
Union Carbide	1,796,100	28¼	+ ⅞
AT&T	1,774,100	35¾	+ ⅜
IBM	1,771,100	109⅝	+ ⅝
Interco	1,664,100	2¼	+ ⅛
Windmere	1,647,200	16⅛	+ ⅞
Am Cyanamid	1,569,000	53¼	− 2¼
Gen Electric (xd)	1,566,700	55	+ ⅜
Eastman Kodak	1,537,600	47⅛	+ ⅝

Base values of all indices are 100 except NYSE All Common – 50; Standard and Poor's – 10; and Toronto Composite and Metals – 1000. Toronto indices based 1975 and Montreal Portfolio 4/1/83. † Excluding bonds. ‡ Industrial, plus Utilities, Financial and Transportation. (c) Closed. (u) Unavailable.

(INDICES — other markets)

	June 6	June 5	June 2	June 1	1989 High	1989 Low
AUSTRALIA						
All Ordinaries (1/1/80)	1523.3	1535.5	1524.8	1531.5	1583.7 (23/5)	1412.9 (7/4)
All Mining (1/1/80)	696.3	696.1	687.7	690.0	727.0 (26/1)	652.6 (7/4)
AUSTRIA						
Credit Aktien (30/12/84)	333.28	329.87	330.58	329.48	333.28 (6/6)	219.5 (2/1)
BELGIUM						
Brussels SE (1/1/80)	6099.66	6099.96	6103.98	6099.23	6125.62 (29/5)	5519.30 (4/1)
DENMARK						
Copenhagen SE (3/1/83)	(c)	(c)	312.73	310.46	312.73 (2/6)	275.49 (27/2)
FINLAND						
Unitas General (1975)	810.5	811.8	810.7	808.1	815.8 (18/4)	723.3 (4/1)
FRANCE						
CAC General (31/12/82)	483.3	485.9	481.2	477.6	485.9 (5/6)	417.9 (4/1)
Ind. Tendance (30/12/88)	113.8	114.5	113.7	112.7	114.5 (5/6)	97.5 (27/2)
GERMANY						
FAZ Aktien (31/12/58)	589.93	595.49	593.20	588.26	595.49 (5/6)	535.78 (27/2)
Commerzbank (1/12/53)	1750.7	1766.3	1760.8	1746.6	1766.3 (5/6)	1595.7 (27/2)
DAX (30/12/87)	1413.78	1419.13	1419.71	1413.00	1419.71 (2/6)	1271.70 (23/2)
HONG KONG						
Hang Seng Bank (31/7/64)	2149.71	2093.61	2675.38	2689.98	3309.64 (15/5)	2093.61 (5/6)
ITALY						
Banca Com. Ital. (1972)	619.18	617.06	612.19	609.30	620.30 (24/4)	577.49 (28/2)
JAPAN						
Nikkei (16/5/49)	33452.01	33457.08	33667.42	33981.3	34266.75 (31/5)	30183.79 (5/1)
Tokyo SE (Topix) (4/1/68)	2482.58	2486.57	2501.56	2518.21	2544.60 (8/5)	2366.91 (6/1)
NETHERLANDS						
CBS Ttl. Rtn. Gen. (End 1983)	245.8	243.9	244.9	244.7	245.8 (6/6)	208.3 (3/1)
CBS All Shr (End 1983)	191.5	190.0	190.8	190.6	191.5 (6/6)	166.7 (1/3)
NORWAY						
Oslo SE (2/1/83)	629.44	633.79	634.34	635.65	665.61 (19/4)	467.17 (2/1)
SINGAPORE						
Straits Times Ind. (30/12/66)	1233.13	1271.37	1305.21	1292.94	1310.02 (17/5)	1030.69 (4/1)
SOUTH AFRICA						
JSE Gold (28/9/78)	1445.0♦	1445.0	1390.0	1377.0	1639.0 (23/3)	1291.0 (15/2)
JSE Industrial (28/9/78)	2459.0♦	2451.0	2434.0	2413.0	2581.0 (28/4)	1961.0 (3/1)
SPAIN						
Madrid SE (30/12/85)	309.15	309.39	310.35	312.36	313.18 (31/5)	268.61 (1/3)
SWEDEN						
Jacobson & P. (31/12/56)	4001.5	4038.4	4018.9	4024.6	4053.9 (30/5)	3333.9 (3/1)
SWITZERLAND						
Swiss Bank Ind. (31/12/58)	699.5	700.1	694.4	680.2	700.1 (5/6)	613.1 (3/1)
WORLD						
M.S. Capital Intl. (1/1/70)	(u)	500.3	503.6	501.4	519.0 (17/2)	491.2 (28/3)

♦ Subject to official recalculation.

Base values of all indices are 100 except Brussels SE and DAX – 1,000 JSE Gold – 255.7 JSE Industrials – 264.3 and Australia. All Ordinary and Mining – 500; (c) Closed. (u) Unavailable.

TOKYO - Most Active Stocks
Tuesday June 6 1989

	Stocks Traded	Closing Prices	Change on day
Toshiba	20.89m	1,430	−10
Tosoh	15.9m	1,010	+108
Kawasaki Steel	12.5m	978	+9
Fuji Heavy	11.7m	1,090	+10
Ebara	11.1m	2,270	−40
Nippon Steel	10.7m	857	−7
Nippon Metal	8.9m	1,270	+20
NOK	8.9m	1,810	+60
Japan Organo	8.3m	1,320	+90
MHI	7.8m	1,150	−10

AMEX COMPOSITE PRICES
4pm prices June 6

[illegible]

3pm prices June 6

NEW YORK STOCK EXCHANGE COMPOSITE PRICES

12 Month High	Low	Stock	Div.	Yld.	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
		– A – A – A –								
31¾	21¼	AAR	.44	1.4	20	96	31⅞	30½	30½	– ⅜
10⅛	8⅜	ACM n	1.01	11.		156	9¼	9⅛	9⅛	– ⅛
11⅞	10¼	ACMIn	1.26a	12.		221	11	10⅞	10⅞	
10⅛	8½	ACM M	n1.01	11.		382	9⅜	9¼	9¼	+ ⅛
11½	10	ACM Sc	1.26	12.		905	10⅞	10¾	10¾	
10	8⅝	ACMSp	1.01	11.		412	9	8⅞	9	
17¼	10⅞	AL Lab	.12	.7	18	51	16½	16¼	16¼	+ ⅛
4⅞	3	AMCA	.12e	3.0	27	5	4⅛	4	4	
6⅞	3½	AM Intl				928	5⅝	5½	5½	
23½	18⅛	AM In pf	2	9.2		66	21⅞	21⅝	21¾	
65⅝	40⅞	AMR			7	4327	62⅛	61⅛	61½	– ⅜
9½	3¼	ARX				73	4⅝	4⅜	4⅜	
46⅞	35¼	ASA	3a	7.1		711	42	40½	42	+ 1¼
22⅝	15¼	AVX	.24	1.1	10	719	22⅛	21⅝	22	+ ⅜
61	43½	AbtLab	1.40	2.3	17	2837	60⅝	59⅝	59⅞	– ⅞
19	15⅜	Abitibi g	1			15	16¼	16⅛	16⅛	– ⅛
12	7½	AcmeC	.40	3.6		44	11⅛	11	11⅛	
8	5⅞	AcmeE	.32	4.1	16	11	8	7¾	7¾	– ¼
34⅛	20¼	Acuson			24	518	31⅞	31⅛	31¼	– ½
16⅞	14¼	AdaEx	1.82e	12.		193	15⅝	15½	15½	
16⅞	7⅛	AMD				3027	10⅛	10	10	– ⅛
43½	28¼	AMD pf	3	8.8		4	34	34	34	– ¼
10⅛	6½	Adobe				56	9⅞	9⅝	9⅞	+ ⅛
18⅞	16½	Adob pf	1.84	10.		1	18⅜	18⅜	18⅜	
21⅞	19⅞	Adob pf	2.40	12.		10	20⅞	20⅞	20⅞	
9¾	6¼	Advest	.12	1.7	17	20	7⅛	7	7	– ⅛

Continued on Page 49

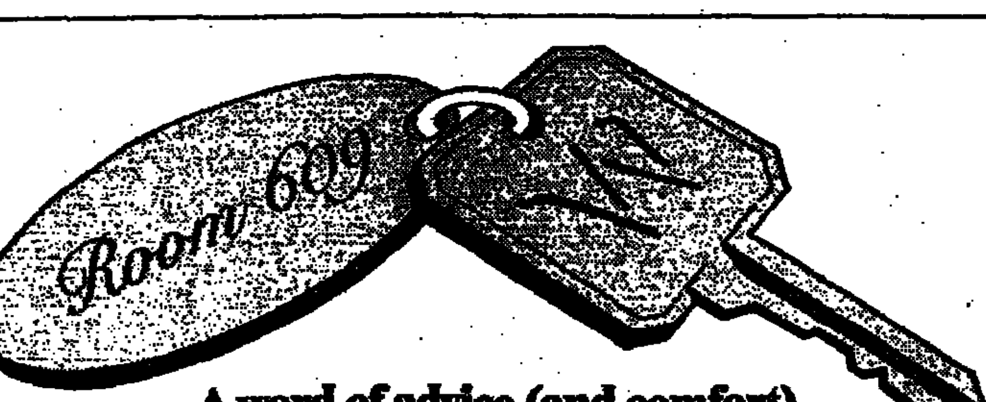
NYSE COMPOSITE PRICES

12 Month High	Low	Stock	Div.	Yld.	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
Continued from previous Page										
1½	1⅛	ProRtC			5	29	1⅛	1⅛	1⅛	
6⅝	6	PruRl	.69	11.		124	6⅝	6¼	6¼	-⅛
9⅝	8⅛	PruStr	1.05e	13.		x1086	8½	8⅛	8⅛	+⅛
23⅛	19½	PSvCol	2	9.0	13	951	22⅛	22⅛	22¼	-⅛
22¼	20½	PSCol pf2.10		9.7		14	22	21¾	21¾	-⅛
75⅛	67¼	PSIn pfD7.15		9.4		z30	u76	74	76	+3
87⅞	81½	PSIn pfF8.52		9.5		z110	u89½	88½	89½	+1⅛
90	80¼	PSIn pfG8.38		9.4		z3100	89½	88	89½	+2½
91½	87½	PSIn pfH8.88		9.7		z220	u92	90	92	+4¼
6½	3	vjPSNH			4	647	4¼	4⅛	4¼	+⅛
17¼	5	vjPSNH pf				z780	11	10½	11	
14⅞	6	vjPNH pfB				5	11⅛	11	11⅛	
19¾	8¾	vjPNH pfC				6	12¾	12¼	12¼	-⅛
16½	6¼	vjPNH pfD				5	11	11	11	-⅛
16	6	vjPNH pfE				8	11⅛	11	11	
15¼	6¼	vjPNH pfG				3	11⅛	11⅛	11⅛	
15⅞	10¾	PSvNM	.36j			2117	13⅝	13¼	13½	+⅛
26¾	22	PSEG	2.04	7.9	10	3876	26⅛	25⅝	25⅞	+⅛
44½	40½	PSEG pf4.18		9.3		210	s45	45	45	+1⅛
73⅝	66½	PSEG pf6.80		9.3		z6100	73⅛	73⅛	73⅛	+1⅛
83⅛	75⅝	PSEG pf7.80		9.5		z550	82	81	82	+1
83½	77⅛	PSEG pf8.08		9.7		z150	83	82½	83	+1½
79½	72¼	PSEG pf7.40		9.4		z10	78½	78½	78½	+1½
[illegible]										

OVER-THE-COUNTER

Nasdaq national market, 3pm prices June 6

Stock	Div.	Sales 100s	High	Low	Last	Chng
[illegible]						



FINANCIAL TIMES
Wednesday June 7 1989

AMERICA

Equities advance as monetary policy eases

Wall Street

IN A market which is increasingly subject to wide swings due to waves of futures-related selling of the Standard & Poor's 500, stocks yesterday rebounded from Monday's sharp loss which had been almost entirely due to programme trades, *writes Janet Bush in New York*.

The Dow Jones Industrial Average swung in both directions but ended 15.62 points higher at 2,496.32 on active volume of 187m shares.

There were various positive factors around for stocks yesterday including a higher dollar, higher bonds and clear confirmation that the US Federal Reserve has eased monetary policy by lowering its target for Fed Funds by about ¼ point.

However, all these factors were more or less present on Monday when the Dow fell more than 37 points. The only difference between Monday and yesterday was that the easing was widely assumed to be taking place on the former and confirmed on the latter.

This market is mostly concerned about its own technical position in the vicinity of 2,500 on the Dow and about the strength of cash flow into the market. There are hopes that many institutions, who have been holding large cash positions, will want to raise their stocks weighting by the end of the quarter.

Among featured issues yesterday was Time Inc, which jumped $3⅛ to $126⅛, after a US press report that Paramount Communications, formerly Gulf & Western, is considering whether to launch a takeover bid for the company and that it will decide soon whether to proceed with a bid. Paramount refused to comment on the report and Time said that it expected to go through with its merger with Warner Communications.

American Cyanamid fell $2⅝ to $53⅛. At least two large brokers have lowered their earnings estimates for the company after its agreement to acquire Praxis Biologics for stock valued at $14 a share.

RJR Holdings preferred stock, very actively traded on the NYSE, was up $⅛ at $22⅞ after RJR Nabisco, the company's principal subsidiary, agreed to sell five European food subsidiaries to BSN of France for $2.5bn.

Nike, the sports shoes manufacturer, jumped $2½ on the OTC market to $42⅝, its highest level in a year. The company said it could not explain the stock's recent strength.

Also on the OTC, Novell added $⅝ to $34¼ after the company said its net income for the fiscal second quarter ended April 29 was in line with expectations. Its main competitor, 3Com, gained $⅞ to $20⅝ having slumped $1⅞ on Monday due to a forecast of lower than expected fiscal fourth quarter sales. Pyramid Technology slumped $3⅛ to $9⅝ on the OTC market after the company said it may report a loss in its latest quarter ending this month.

Among blue chip issues, IBM was up $⅞ at $109⅝, Merck added $⅞ to $71⅝, and Philip Morris rose $⅞ to $140⅛.

Canada

PRECIOUS METALS led the advance as Toronto share prices closed with a solid gain in active trading.

The composite index added 35.10 to 3,757.2 as advances outnumbered declines 432 to 255. Volume rose to 31.18m shares from 20.08m on Monday.

EUROPE

Mixed trading focuses on individual stocks

INTEREST focused on selective stocks and sectors in a rather nervous Europe yesterday, with further profit-taking but plenty of buying as well, *writes Our Markets Staff*.

FRANKFURT had a quieter day than of late, with further profit-taking after the spate of records for the year. A sharply higher dollar caused some confusion about the outlook for domestic interest rates and events in China cast a slight shadow, because some German companies such as VW have interests there.

Wall Street's overnight setback also had an effect, but the easier tone was seen as an understandable consolidation. "We've got 600 (on the FAZ) just in sight and there's bound to be a certain amount of nervousness in advance of that," said one salesman.

The FAZ was off 5.56 at 589.93 after reaching a 1989 record on each of the past five trading days, while the DAX lost 5.35 to 1,413.78. Volume eased to DM4.74bn, active but well below Monday's DM7bn.

Construction stock Holzmann was the biggest mover, falling DM42 to DM928 following a market rumour, denied by Deutsche Bank, that the bank had sold its roughly 35 per cent stake. Holzmann stock was said to be difficult to buy, even at these lower levels, which still leave it about 60 per cent up on the year.

PARIS relied on food group BSN to provide the excitement in a generally uninteresting day. BSN shares jumped and then fell after news that the company had bought five European businesses from RJR Nabisco of the US for $2.5bn. One analyst said BSN had been "bumbling along quite steadily when out came the news and suddenly the price exploded."

It moved from a high of FFr741 to end at its low of FFr691, a drop of FFr23 or 3.2 per cent on its previous close. Investors speculated the company would need to make a fairly large cash call or sell another business to pay for the Nabisco businesses.

Volume of shares traded in BSN, which had been moderate before the news, shot up to 315,740 afterwards, making it one of the most active stocks. This helped boost French turnover to an estimated FFr3bn, compared with the previous day's FFr2.21bn.

The CAC General index eased 2.6 from its record level on Monday to 483.3. The OMF 50 index fell 1.34 to 503.83 and the CAC 40 index lost 9.07 to 1,755.56.

MILAN rose in a busy session, with the focus on bank stocks. The Comit index gained 2.12 to 619.18.

The suspension from trading, imposed on May 30, of two banks was lifted. Nuovo Banco Ambrosiano, off L104 at L3,495, and Banca Cattolica del Veneto, L51 higher at L6,500, announced details of their merger plan on Monday.

AMSTERDAM remained fairly active, closing higher after recovering from early falls induced by the rise in the dollar and losses in the Dutch bond market.

The CBS tendency index gained 1.0 to 183.3 as bonds recovered. Volume of Fl 838.5m was similar to Monday's and 10 per cent of it, or 1.4m shares, was accounted for by trading in newly listed Daf, which ended off 20 cents at Fl 58.10.

Royal Dutch was the most active stock, rising Fl 1.50 to Fl 138.20 on the dollar's strength. Financials did well, with insurer Amev up 90 cents at Fl 50.90 in active trading and Amro Bank gaining Fl 1.80 to Fl 82.80.

ZURICH also attracted buyers after falling initially in response to Wall Street's overnight loss, and shares ended little changed in moderate trading. The Crédit Suisse index edged 0.4 higher to 575.4.

MADRID had another dull day, with the general index easing 0.24 to 309.15 in turnover put at more than $100m.

Telefonica was steady at 191.7 per cent of par after reporting an 8 per cent rise in first quarter net profits, seen as below expectations.

OSLO found few domestic factors to influence the market and closed mostly lower as investors throughout Scandinavia held back amid the deepening crisis in China.

The all-share index fell 4.22 to 488.15 in thin trading worth NKr241m. Den Norske Creditbank, Norway's second biggest bank, added NKr1 to NKr133 after announcing a return to profit in the first four months.

COPENHAGEN climbed to record levels again, led by strong gains in shipping shares after good foreign exchange reserve and trade figures. The stock exchange index advanced 2.5 to 315.23.

A strong dollar supported the shipping sector, which also gained from high transport prices and international interest. "The market is generally very firm with quite a lot of liquidity and underlying strength from the main shipping stocks," an analyst said.

BRUSSELS closed mainly down in moderate trading with most interest focused on steel companies Clabecq, Arbed and Cockerill which are expected to produce good results.

Clabecq soared BFr240 to BFr3,030 on a turnover while Luxembourg-based Arbed climbed BFr440 to BFr6,540 and Cockerill firmed BFr8 to BFr363.

STOCKHOLM edged lower in relatively slow, nervous trading. The Affärsvärlden General Index shed 4.6 to 1,171.3.

ASIA PACIFIC

Nikkei declines as bargain hunters lift Hong Kong

Tokyo

THE STEEP decline on Wall Street gave Tokyo another bout of the jitters and share prices moved erratically throughout the day to close down modestly in very thin volume, *writes Michiyo Nakamoto in Tokyo*.

The Nikkei average opened sharply lower as the fall on Wall Street dampened investor interest. Although midday buying by investment trusts supported the market at lower levels, the uptrend was short-lived and the Nikkei average closed down 5.07 at 33,452.01.

The day's high was 33,574.36 while the low was 33,247.73. Declines outnumbered gains by 556 to 335 with 192 issues unchanged. Volume remained low at 567m shares, although up on Monday's 489m. The Topix index of all listed shares fell 3.99 to 2,482.58, while in London the ISE/Nikkei 50 index fell 1.91 to 1,979.37.

The market showed signs of psychological vulnerability in the face of a substantial overnight fall on Wall Street and uncertainty about the yen's fate on currency markets. Although analysts contend that international events are no longer much of a force on the market, their impact could not be ignored as they affected currency moves which in turn hit the market. The yen's drop came at a time when investors were just beginning to feel the currency markets had finally stabilised.

During the day, buying from investment trusts and arbitrage between the cash and futures markets helped lift the market. Investors, however, generally remained unwilling to take an active part in the market, as reflected by the pathetically low turnover.

There was a notable lack of direction as external events made it difficult to focus attention on specific themes.

Issues with specific incentives were favoured while those related to the environment theme were mixed. Ebara, an industrial machinery maker, which was popular on Monday, lost favour and fell Y40 to Y2,270 in active trading. On the other hand, Tosoh, an integrated chemical maker, surged Y108 to Y1,010 on news that the company had jointly developed a new zeolite-based catalyst for dissolving chlorofluorocarbons. Tosoh was second most actively traded with 15.3m shares.

Tosoh's strength spilled over to Japan Organo, the country's largest maker of water treatment equipment, which was considered an environment-protection issue. Japan Organo closed up Y90 at Y1,320 in active trading.

The renewed weakness of the yen against the dollar dealt a blow to steel issues during the day but later buying on lower prices helped some of them recover by the close. Nippon Steel fell Y13 to a low of Y851 but managed to close with a loss of just Y7 to Y857.

In Osaka the OSE average dropped 178.29 to 32,414.18 while volume shrank further to 34.42m shares from 37.35m traded on Monday. Nintendo, the maker of video computer games, lost the Y300 it gained on Monday to finish at Y11,700.

THE BELEAGUERED Hong Kong stock market found some buying support yesterday, as bargain hunters pushed the Hang Seng index up by 56.1 points, or 2.68 per cent, to end at 2,149.71, *writes Michael Murray in Hong Kong*.

The territory was awash with rumours during the day, mostly centred upon reports of clashes between troop units in Peking. Many investors sought trading profits when prices rose and fell as the news spread into the market.

Brokers said buying was mostly from locals, with international investors still cautious and generally preferring to stay on the sidelines.

The Hongkong Bank intervened lightly during the day, buying up blue chips as it did during Monday's 581.77 point drop.

"This has to be just a technical bounce," said Mr Kevin Snowball, assistant director for south-east Asian equities at County NatWest. "Until events in China reached some sort of conclusion, the market would continue to fluctuate, he added.

Another broker with a British securities house commented: "We are awaiting the next jolt from China, and that could be a jolt upwards or downwards."

Turnover stood at HK$2.6bn compared with Monday's HK$2.25bn. The Hang Seng index has now fallen by 36.12 per cent since panic first set in on May 19, just before the martial law declaration in Peking. It is back to levels last seen in December 1987 in the wake of the global equities crash of October that year.

Roundup

THE ASIA Pacific region appeared shell-shocked as the crisis in China took a further heavy toll on share prices.

SINGAPORE plummeted for a second day, with shares suffering their biggest loss in points terms this year as the Straits Times industrial index fell 38.24 to 1,233.13 in turnover of 100m shares, up from Monday's 93.6m. The market has lost 5.5 per cent in two days as a result of the turmoil in China and its impact on Hong Kong.

Unit trust managers were particularly active, with many selling in order to meet margin calls on Hong Kong holdings.

Among the worst losers were Singapore Airlines foreign and local which both fell 60 cents to S$16.40 and S$12.90.

TAIWAN also plunged again, with the weighted index losing 438.99 to 8,681.55 for a two-day setback of 9.3 per cent.

AUSTRALIA fell further in featureless trading, with losses triggered by Wall Street's fall on Monday. The All Ordinaries index ended down 12.2 at 1,523.3 in turnover of 149m shares worth A$323m.

Email, the white goods manufacturer which announced record profits and a one-for-10 scrip issue on Monday, fell 10 cents to A$4.10, apparently because of its interests in China.

NEW ZEALAND stocks were badly hit by the tension in the region and by the large losses announced by Bank of New Zealand. The bank's shares lost 22 cents to 78 cents and the Barclays index fell 26.92 to 1,878.07 in thin turnover.

SOUTH AFRICA

GOLD shares were mixed in Johannesburg, with prices drifting around Monday's levels in cautious trading. Randfontein lost R2 to R185 but Vaal Reefs rose R2.50 to R302.

Peak performance by Switzerland

By Jacqueline Moore

A MIXTURE of political and economic influences produced further wild swings in world stock markets last week.

The evaporation of interest rate fears helped Switzerland become the week's top performer, jumping 4.8 per cent in local currency terms, according to the FT-Actuaries World Indices. Hong Kong, meanwhile, retreated 3.3 per cent as events in China hit trading – and that was before this Monday's 22 per cent plunge.

Switzerland relaxed after the West German Bundesbank's decision on Thursday to leave interest rates unchanged. This, together with the return of foreign interest, helped to propel it to a year's high on Friday. One analyst described the surge as "all very bizarre," with people searching for any excuse to buy.

Until last week, Switzerland had risen a tiny 2.8 per cent since the start of the year. Last week's rise took its advance to a healthier 7.6 per cent – but still meagre compared with European markets such as the UK, up 16.7 per cent, and the Netherlands, up 14.6 per cent.

Asia was volatile last week, with Hong Kong dominated by the unrest in China. A four-day decline virtually wiped out Hong Kong's gains this year. By Friday, Hong Kong was just 0.2 per cent up on the start of 1989, after being 24 per cent higher on May 12.

Some Far Eastern markets benefited from Hong Kong's nervousness. Malaysia was the world's second best performer last week, advancing 4.6 per cent, while Singapore gained 3 per cent. Investors worried about Hong Kong had diversified their risk around the region, said one analyst.

Elsewhere, there were impressive performances from Denmark, which was encouraged by recent tax reform proposals and a large trade surplus, and Mexico, the year's best performer among the 24 markets covered, which continued to benefit from an easing of foreign investment regulations. West Germany was also strong, rising 3.1 per cent after reaching a series of year highs.

Europe's steepest fall was in Norway, which dropped 2.5 per cent as consolidation set in after a run of all-time peaks.

● Dollar investors had a tough time in international markets last month as the strength of the US currency eroded gains in overseas share prices, *writes Alison Maitland*.

US investors who stayed at home had a reasonably profitable May, with their domestic market gaining 3.7 per cent. But world markets excluding the US, which edged up 1.3 per cent in local currency terms, suffered a 4.6 per cent drop when the dollar's substantial rise against most other currencies was taken into account.

Of the 22 countries outside North America covered by the FT-Actuaries World Indices, only three gained in dollar terms last month: Mexico, up 22.7 per cent, Singapore, 3.2 per cent higher, and Malaysia, rising 1.3 per cent.

The opposite was true for sterling investors abroad, who benefited from the pound's weakness in May and saw a 5.6 per cent rise in their non-UK portfolios. While the UK was unchanged, the US climbed 11.4 per cent and Singapore 10.8 per cent in sterling terms.

MARKETS IN PERSPECTIVE

	% change in local currency †				% change in sterling †
	1 Week	4 Weeks	1 Year	Start of 1989	Start of 1989
Austria	+1.84	+1.30	+56.57	+39.03	+43.01
Belgium	−0.31	+0.98	+21.39	+6.11	+9.71
Denmark	+4.50	+2.99	+63.75	+18.03	+20.67
Finland	+1.27	−0.20	+16.00	+17.62	+26.58
France	+1.83	+5.16	+44.73	+15.14	+19.27
West Germany	+3.08	+2.40	+25.92	+7.33	+10.53
Ireland	−1.51	−3.73	+18.23	+15.61	+19.06
Italy	+1.37	−0.02	+22.56	−0.17	+4.26
Netherlands	+0.44	+0.90	+26.49	+14.55	+18.22
Norway	−2.49	−2.43	+63.71	+38.17	+45.19
Spain	−0.14	+2.34	+2.69	+10.13	+14.35
Sweden	−1.11	+3.45	+40.96	+18.55	+24.64
Switzerland	+4.75	+1.69	+10.25	+7.64	+9.06
UK	−1.84	−0.73	+15.65	+16.74	+16.74
EUROPE	+0.18	+0.96	+21.48	+12.98	+14.96
Australia	+0.30	+1.79	−1.74	+3.40	+4.23
Hong Kong	−3.33	−18.89	+9.09	+0.21	+14.35
Japan	−1.26	−2.19	+17.82	+5.37	+5.59
Malaysia	+4.63	+1.71	+37.82	+28.57	+46.52
New Zealand	+0.56	−3.40	−4.83	+3.84	+9.39
Singapore	+3.01	+2.48	+33.52	+30.0	+47.13
Canada	+1.31	+4.24	+11.48	+11.34	+25.15
USA	+1.27	+6.52	+23.34	+17.30	+33.10
Mexico	+4.19	+26.59	+53.25	+51.85	+60.16
South Africa	−0.16	−3.55	+38.68	+22.70	+28.45
WORLD INDEX	−0.94	+1.22	+19.86	+16.73	+16.26

† Based on Friday June 2nd, 1989
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FT-ACTUARIES WORLD INDICES

Jointly compiled by The Financial Times Limited, Goldman, Sachs & Co., and County NatWest/Wood Mackenzie in conjunction with the Institute of Actuaries and the Faculty of Actuaries

NATIONAL AND REGIONAL MARKETS	TUESDAY JUNE 6 1989						MONDAY JUNE 5 1989			DOLLAR INDEX		
Figures in parentheses show number of stocks per grouping	US Dollar Index	Day's Change %	Pound Sterling Index	Local Currency Index	Day's change % local currency	Gross Div. Yield	US Dollar Index	Pound Sterling Index	Local Currency Index	1989 High	1989 Low	Year ago (approx)
Australia (87)	130.57	−1.8	123.34	115.55	−1.2	5.00	132.94	124.63	116.89	157.12	128.28	143.62
Austria (19)	119.82	−0.9	112.99	123.37	+0.4	2.09	120.75	113.19	122.88	124.16	92.84	87.85
Belgium (63)	128.24	−1.4	121.14	131.57	−0.3	4.17	130.03	121.89	131.95	137.10	126.33	123.76
Canada (124)	138.77	+0.8	132.03	121.60	+0.9	3.36	138.70	130.03	120.57	139.77	124.67	121.91
Denmark (38)	180.68	+0.2	170.67	189.59	+1.0	1.78	180.40	169.12	187.64	181.03	165.36	129.17
Finland (26)	144.12	−1.4	136.14	133.93	−0.1	1.56	146.12	136.98	134.07	159.16	125.81	137.96
France (128)	119.09	−1.1	112.50	125.59	−0.3	3.02	120.47	112.94	125.95	122.79	112.57	96.81
West Germany (100)	84.42	−1.3	79.74	86.77	−0.6	2.34	85.57	80.22	87.31	90.40	79.56	77.55
Hong Kong (49)	88.78	+2.7	83.87	88.89	+2.7	6.07	86.41	81.01	86.53	140.33	86.41	103.79
Ireland (17)	136.61	−1.7	129.04	142.63	+0.0	2.95	139.03	130.34	142.68	151.36	125.00	135.63
Italy (97)	78.04	−0.6	73.72	83.81	+0.3	2.63	78.54	73.63	83.58	86.88	74.97	70.27
Japan (455)	175.13	−0.9	165.43	158.19	−0.2	0.50	176.69	165.64	158.43	200.11	175.13	171.94
Malaysia (36)	174.24	−2.6	164.59	181.52	−2.3	2.64	178.94	167.74	185.76	185.03	143.35	142.27
Mexico (13)	228.80	−0.6	216.13	619.65	−0.4	0.81	230.30	215.89	622.19	230.30	153.32	162.42
Netherland (42)	116.17	+0.0	109.73	118.16	+0.9	4.36	116.14	108.87	117.15	122.22	110.63	105.43
New Zealand (24)	64.03	−1.6	60.48	58.88	−0.5	6.28	65.10	61.03	59.17	76.02	64.03	80.94
Norway (26)	174.52	−1.7	164.85	169.96	−0.8	1.58	177.48	166.38	171.34	198.39	139.92	124.43
Singapore (26)	153.69	−2.4	145.17	138.25	−2.2	2.01	157.40	147.55	141.30	161.98	124.57	119.13
South Africa (60)	136.44	+0.9	128.88	124.00	+0.5	4.26	135.22	126.76	123.42	144.86	115.35	136.91
Spain (43)	143.92	−2.9	135.95	140.05	+0.1	3.57	148.20	138.93	139.95	156.17	143.14	163.05
Sweden (35)	156.80	−0.6	148.12	154.68	−0.1	2.22	157.80	147.93	154.82	162.00	138.45	123.80
Switzerland (57)	74.35	−1.2	70.24	79.01	−0.2	2.58	75.28	70.58	79.13	79.78	67.81	80.53
United Kingdom (314)	137.37	+0.1	129.76	129.76	+0.8	4.45	137.28	128.67	128.67	153.33	134.53	137.10
USA (557)	132.18	+0.6	124.86	132.18	+0.6	3.39	131.43	123.21	131.43	132.76	112.13	108.06
Europe (1005)	114.62	−0.6	108.27	113.75	+0.3	3.60	115.32	108.11	113.40	121.70	112.65	109.05
Nordic (125)	152.42	−0.5	143.98	147.74	+0.2	1.93	153.25	143.66	147.41	155.61	137.95	117.61
Pacific Basin (677)	170.25	−0.9	160.82	154.05	−0.2	0.73	171.76	161.02	154.29	194.72	170.25	166.15
Euro–Pacific (1682)	148.05	−0.8	139.85	137.93	+0.0	1.64	149.23	139.90	137.95	164.22	148.05	144.52
North America (681)	132.54	+0.6	125.20	131.53	+0.6	3.39	131.77	123.53	130.76	133.00	112.79	108.80
Europe Ex. UK (691)	100.23	−1.1	94.68	103.84	−0.1	2.94	101.39	95.05	103.95	105.29	96.30	91.63
Pacific Ex. Japan (222)	111.93	−0.7	105.73	102.60	−0.2	5.03	112.70	105.65	102.84	137.65	111.93	122.47
World Ex. US (1879)	147.69	−0.7	139.51	137.44	+0.0	1.72	148.78	139.47	137.41	162.77	147.69	143.68
World Ex. UK (2122)	141.56	−0.3	133.72	136.24	+0.1	2.07	142.03	133.14	136.04	146.04	138.06	129.23
World Ex. So. Af. (2376)	141.20	−0.3	133.38	135.71	+0.2	2.27	141.63	132.77	135.43	146.65	136.82	129.87
World Ex. Japan (1981)	125.13	+0.1	118.20	124.11	+0.5	3.52	124.97	117.15	123.54	126.30	114.51	109.75
The World Index (2436)	141.17	−0.3	133.35	135.63	+0.2	2.28	141.59	132.73	135.35	146.51	138.83	129.92

Constituent changes:(6/6/89) name changes: Hoffman-La-Roche to Roche Hldgs.(Switzerland) and Gulf & Western to Paramount Comms.(US). Intl. Thomson and Thomson Newspapers have merged to form Thomson Corp.(Canada).